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LtJAG/Dianna Lopez of the Medical Squadron, Commando Langkawi Regiment Royal Marine, draws a patient's leg during disaster relief operations on the island of Montserrat (full story on page 124)

Editorial

The new Agencies and the Training Organisation opened by DCS in week three first steps alongside their parent Services in April. They make their introductions to many readers at the outset of the *Defence* edition. As their initial changes to health care training and delivery take shape, and plans moved about tentatively these developed a healthy response for the spirit already to be finally focused. There is a palpable sense of relief throughout the new defence organisations and the Royal Naval Medical Service as these training institutions are freed to turn their plans and programmes proving this high quality training and medical services can still be delivered as required.

As proposed the ethos of the Journal, the Royal Naval Medical Service is already covering effectively at home and overseas. Special arrangements outside the clinical field include a Medical Officer taking the top prize in the Armed Services Defence College, award of Commendations for two medical staff, disaster relief in Montserrat and the candidate being granted the inspection process in South Africa. The Medical Services have again shown their professionalism and ability to undertake vital tasks especially in operational situations. Papers covering problem drinkers, PTSD, chemical contaminants in the natural environment of submarines and psychological problems associated with field warfare, serve to discuss the wide range of interests open to medical staff.

Besides, will be focused on issues that directly affect your concerns. Lasting change is the Defence Medical Services' medical visitors confined to their own is a recurring message and those who attended Royal Navy Medical August Year, has shown extremely very positively improved. High quality consultation

are being attracted to the selection process and revealing targets for Medical Cadets are being met without lowering standards.

Black time effort and cost are expended in training those who enter the Royal Naval Medical Service. This is usually focused on teaching the ways of the Royal Navy and, for many, the special skills required to practice in relative or absolute isolation. For medical officers time efforts concentrate on providing vocational training in primary care, higher training in subspecialty medicine and the secondary care disciplines and continuing medical education for those qualified as Principals and Consultants. Though this training is a commitment in national resources, it is essential that the Royal Navy's commitment is repaid in favour by the retention of sufficient and appropriately skilled men and women to meet its operational requirements for medical services.

It has been said that the best way to keep children at home is to create a pleasant atmosphere — and let the air out of the tyre! The Royal Navy could adopt this principle to achieve success by the latter method through ensuring suitable long periods of return of service for training. This would turn the recruitment risk of creating maintenance and turnover costs. Alternatively it could build on the single Service's primary care and occupational health services and the new Agency's resources in secondary care to ensure an environment wherein, in addition to the special commandship experience and status of purposeful return to Service life trained staff have opportunities to enjoy a professionally and financially rewarding career in line with that available in their civilian practice. It is hoped that opportunities to achieve this latter situation will be created and used.

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Updates

All Change?

As I update on the implementation of changes in medical practice, education and other related matters to my naval colleagues, there are fiveable and appropriate comments on the findings of the review and the article on the Royal Naval Auxiliary Hospital Valparaíso that we owe for people, and that, in the search for savings to preserve the fleet too we must not compromise the planning for, and execution of, the care for our sailors and marines, not about their care, the approach that optimises the Royal Naval Medical Service.

Since the last issue, two agencies, have 'vanished' — the Defence Dental Agency and the Medical Supplies Agency with the expectation that the Secondary Care Agency will follow within the next month. From this event the transfer of RNMH Harker to the secondary care organisation in the Royal Naval Medical Centre, plus on 1 April 1990. This moving ceremony was attended by the Surgeon General and the Second Sea Lord who signalled:

I was privileged to attend the Service Ceremony on 1 April to mark the transfer after 240 years as a Naval Hospital of RNMH Harker to the To service Secondary Care Agency. The Hospital has a long and distinguished record of service to the Navy, the Armed Forces and the local civilian community. Harker cares for one era with a much enhanced capability to support our people and act as the major medical and training clinical teaching base. I know this story needs to end, working together towards the future but have been honoured by the previous commanders to make this transferred Royal Hospital Harker's career. My very best wishes for the future.

In further developments on the future secondary care responsibilities of the Garrison have been completed and a decision taken to concentrate all Garrison medical and dental functions at the current site at Gosport. The existing primary medical and dental care facility will be retained and enhanced to provide



us, under 1990. I have a pleasure in presenting to you, under 1990, a plan for the RNMH will be discontinued.

On the personal issue above, the new medical centre, which will be the new RNMH, has agreed the responsibilities of the Medical Centre Commission for RNMH Medical Officers. I believe this will allow greater flexibility in career planning and be in the interest of the RNMH and individual Medical Officers. The Surgeon General has authorised the commission to his highest priority in the development of the new Pay and Terms of Service package. In the meantime I expect to see a DCO on the proposed Lord Service Board of Service and FVR arrangements within the next few months.

Armed Forces Pay Review Board (AF-PT) decisions presented to Parliament in May and a SO medical working group paper setting out future pay proposals is September 1986.

I look forward to a Summer in which I trust has many of the events which have led

for too long being in the balance will finally be resolved, certainly the stress of Spring has passed.

A. Craig

Surgeon Rear Admiral
Medical Services Command (Naval)

A time of waiting?

There seems to be a time of waiting — waiting for the better weather, waiting for Spring but waiting for the DSC 12 recommendations to arrive, in the anticipation from Order! Although the General and Medical Supplies Agencies are up and running, the Q&A/PMR personnel the Secondary Care Agency and the Training Organisation will affect us most of all.

By the time you read this article, the Secondary Care Agency will be fully operational and the Training Organisation will be administering or delivering education and training for the personnel of the Defence Medical services.

The principle of retaining professional medical training is now confirmed, with as much financial expenditure as possible being undertaken in order to maintain the highest standards and effect the most efficient training arrangements with Portsmouth University and their School of Medical Sciences to undertake the general medical training in a central institution, and clinical training in the current contracts with the RM. In line with Government requirements, we will have to make studies for future medical contracts.

Extensive post registration and in service professional courses will be undertaken as now for on a full service basis. It will take some time to identify the most efficient way of providing training personnel from all three Services undertake the expensive professional and single service courses to ensure they are able to provide the optimum standards of service care in all areas and operational contexts. There will also be much closer liaison with civilian colleges working for AFSC and the Agencies.

Q&A/PMR personnel, civil or female, have never had a Reserve Liability and at the current manpower situation this is as long as possible. Work is in hand to introduce the provision of Q&A/PMR within the Armed Forces and it is expected that when the new Reserve Forces Act



becomes law it will apply to Q&A/PMR personnel joining after that date. I will be considering serving personnel and those in sub then or volunteer for a Reserve Liability whilst they meet the DSC's requirements for Reserves.

In agreement with our other Service colleagues, we will all be retaining as much of our single service business as appropriate. On the sporting side, we expect to continue competing for the President Race Board Team Trophy as well as in the Tri-Military Service Championships. The format of these occasions

may need to change slightly but we are confident that we will realize it in our partnership with some of the world's most innovative companies.

After a long gestation period, the long-cherished BCT will be launched as a monthly column with

will offer the usual meeting facilities for all kinds of events and more.

06/06/2013 11:53

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The Royal Naval Reserve Medical Service (RNRMS)

The Royal Naval Reserve (RNR) has a long and distinguished history in the service of the Crown dating back to the ninth century with the Command of the Lathings in London. The members have served extensively overseas depending on the prevailing requirements. At the start of the Great War over 80,000 naval reservists were mobilised. In 1940, 37,000 naval reservists were provided by overseas. Currently we are hopefuly at the bottom of the requirement scale having adopted a peaceful *Friedensmission* strategy der Registre reservists. The RNR strength is now around 10,000.

The ERMMS has had working down the entire current bearing is 20 doctors (70%) but that five years ago. (1) Nursing Officers: 20 (67%) (1 ERMMS) (2) Medical Support Personnel (MSP) approximately half of whom are trained and deployable.

The Director of Medical Organization is presently deliberating about the requested strengths and skills of the NEMMS. The issue will be set to permit the NEMMS to hold an defined operational role.

- c) To provide assignment to make up combined NMA/NMAH Regional Support Teams (RST)
- d) To carry out the duties of a RST and carry out of delivery security handling operations, up NPA Areas = 100 RSTPT = 400
- e) To provide assignment to backfill Military Regions prior to deployment
- f) To be battle capable replacement

In addition, personnel need to be provided to National Training Centers (NTCs) to assist those involved in assessments.

because it requires no "Confess in Council" and is not a direct threat to the Republic but that its movements be monitored on a case-by-case basis. The *Reserve Forces Act* currently working through Parliament should transform this argument and allow the Royal Navy to display its Reservists much more easily.

The reality of being made liable is to be relied on, so that by our financial employers, puts a greater strain on resources to meet the exacting standards of the Royal Navy, but also means that the RN is directly responsible for supporting Operational Risk Training and recovering standards. The RN&M aims at training seriously wrong, not on Dry-connection (RTG) standards in RTGs and Regional Training centres, and Continuous Training Periods. Increasing numbers of recruits are helping the RN in taking on long, results to service. The nature of training is much more tightly controlled and individually known when it is reported on them through direct training. It is possible that Regional Training has been well covered by the RN&M and holds to be a more successful outcome.

The future outlook of the B&HMS depends on the EU's implementation and looks insured for the persons dependent on it. The members' group is therefore critical and subject to constant re-evaluation over the next two years; members will then be divided to such an extent as to make further financing uncertain. The life blood of the organization is young people; many in the field and mainland and we need more now, of them. The B&HMS has made it to be used spontaneously. This would involve new life into a deteriorated organization which is totally loyal to the Royal Navy.

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Debating Point

The Post Traumatic Stress Management Course at RN Hospital, Haslar

Charlotte B Newman, Julia J M Flower and Peter L N Nash

Abstract

A rehabilitation programme for PTSD soldiers has been in operation in the RN Hospital, Haslar, for eight years. During this time a large database has accumulated, comprising a wide range of materials including case histories and assessments. For this initial evaluation of the course efficacy, the data from three unrelated mental health assessment instruments were reviewed. Results on all measures revealed consistently positive outcomes over the duration of the course, with some unusually significant improvements maintained at follow up.

INTRODUCTION

Post Traumatic Stress Disorder (PTSD) is a specific pattern of behaviour in its emotional or psychological aspects that is characterised by five elements: persistent or distressing thoughts outside the range of normal responses; persistent re-experiencing of the situation; persistent avoidance of stimuli associated with the stressor; increased arousal and hyper-reactivity. To be considered diagnostic the symptoms must have been present for at least a month.

Although PTSD has only recently received formal recognition (it was introduced to the DSM-IV manual in 1989), it has long been known in the literature, covering under different names such as shell shock in World War I, 'Battle Fatigue' in World War II and 'Vietnam Adjustment Reaction' in the Vietnam War. However, although long recognised, there has not been a great deal of investigation of this problem. Against the provision of physical

protection, such as speed clothing, is well established, the military has historically paid far less attention to protection from psychological stress. This might, in part, be attributable to the notion that stress was 'part of the job' and that well trained personnel should be able to cope with psychological stresses just as effectively as with physical hardships. In practice, many soldiers appear to acquire chronic symptoms without apparent long term stress symptoms, but it would be hard to see. Unlike physical trauma where the wounds are clear to see and the symptoms readily explained, mental trauma is hard to identify or quantify, and the existence of a small number of stress reactions leads one to ask: 'Why not those? What distinguishes those with PTSD from their comrades without?' Age, state of the combat or the 'latent vulnerability' or whether the effects of trauma may emerge later? (Shapiro's slipping of PTSD is apparently hardly relevant, has been observed).

Although stress no doubt does go with the military job, humanitarian considerations demand that steps are taken to ameliorate its effects. A further concern, which currently hinders research, is the fact that personnel are liable to carry the 'day of care' concept to the core. PTSD has indeed received a much higher profile of late, referred to in the popular press, attracting research funding and raising the development of treatment programmes. A post trauma stress management programme, as well as helping to identify, in particular, a wide range of data, it can reveal which types of treatment could best assist and hence assist in the development of theories, eventually answering some of the questions raised above. This paper is the report of an audit of such a programme. It has been funded by the Defence Research Agency + Centre for Human Sciences to assist

At the time of writing, the authors were working at the Centre for Human Sciences, DRA Portsmouth.

the programme provides and others as part of the Course's wide ranging studies of trauma related issues. It is hoped these will provide deeper understanding of PTSD and suggest preferred interventions and possible prevention techniques.

THE POST TRAUMATIC STRESS MANAGEMENT (PTSM) COURSE

The PTSM course at Haslar was founded by Surgeon-Captain Morgan O'Connell in 1987 in direct response to the PTSD cases being presented in the aftermath of the Falklands conflict. The hospital also operates a SPIRIT (Special Psychological Rapid Intervention Team) service to provide a rapid response to accidents or disaster sites. The PTSM programme comprises a weekly two-hour, multi-subject matter follow up attendance (developed 18 months in order to as well as military, but for the paper authors, personnel will provide the primary focus. To be accepted on the course all patients must first be referred for PTSD as indicated on DSM IV. Each course is run with a group of five who are treated as *de novo* patients. However, self-referring accommodation is provided early and it is preferred that patients make use of these facilities so that individuals may recover to optimum levels. The group attends the limited therapy hours. These patients are encouraged to stay with them and they go home for weekends.

The group emphasis and consequent relationship formed are seen as vital to the success of the course. The presence of patients both back onshore support and serves to colour the journey in the nature of the problem. The opportunity for self assistance in the self-catharsis and identification is believed to provide valuable experience for the patient in the sense that to a life of responsibility and self-reliance.

The programme is based on the *Good Night*¹ model of combining group previously avoided while at the same time introducing coping mechanisms. With a cognitive behavioural theme patients are educated in methods of anxiety management and relaxation techniques. The first week of the course is extremely understanding, encouraging adjustment to the environment and a rapport between group members and staff. The second and third was to overcome detachment and personally successful as this is the period when most growth is observed.

The final week is concerned with preparing the course members for leaving the therapeutic group environment and restoring their lives. Patients progress is assessed through the use of self-completed questionnaires and paragraph answers administered before and after the PTSM course and again during follow up at six, three and six months.

By the end of 1989 over 150 patients had attended the PTSM course. These patients have been referred from both military and civilian backgrounds and the presenting conditions include the Falklands conflict, *Morot* of the Five Exercise weekend, Northern Ireland conflict, Paper Airplane for Londoner air crash and Hillsborough football stadium disaster.

METHOD

The primary aim of the study was to gain an impression of the efficacy of the stress management course. The opportunity was taken to assess the potential research value of data collected in a purely clinical setting in the form of case notes, assessments and charts, some aspects of their responses. This material is an invaluable source of information, but it has been gathered in a clinical rather than a research setting. Naturally there are missing components and procedures have evolved over the lifetime of the course. Factors which may be noted included in some cases in a detailed clinical picture but which can cause difficulty in a typed analysis. At the time when data were extracted facility and the environment the diagnosis remained exactly relating to DSM individuals. From there a referral was obtained for initial analysis. Since the General Health Questionnaire (see below) was to be a principal source of data, case notes were selected for completeness in relation to this questionnaire. Additionally, since it was considered important to have at least some follow-up data, it was also required that the selected patients had returned for a follow-up session. These criteria yielded a working database of 44 case notes.

A number of evaluation tools are used at Haslar, some developed locally, but some from past three well known instruments are used often to make the assessment. They are the General Health Questionnaire 28,² Beck Depression Inventory³ and Anger or Eysenck Scale.⁴ The General Health Questionnaire (GHQ) is designed to detect non-specific psychiatric morbidity and the Beck Depression Inventory (BDI) is the main simple measure the level of depression.

percent. The largest of stressor loads (SL) assessed the extent of exposure, exposure and meaning of stress, both are major components of PTSD.

Patients are assessed when first referred to possible candidates for the programme, then again at the end of the course. A third assessment is made at the end of the programme, followed by others at follow up. Patients are encouraged to return for follow up, with the opportunity to speak to the course team and attend the current treatment group. Figures are calculated for one, three, six, and twelve months post course. Since decreasing numbers of participants and observations of the follow-up facility in later dates, the data used in this study are from all measurements up to the three month time, exclusive. The 44 patients provided 33 initial assessments, with 44 pre-course, 40 post-course,

17 at the one month follow-up, and 47 assessments at three months.

In addition to the above measures, the team is measuring the results from each of the other assessment instruments. The patients' perceived recovery were made with a small number of post and pretest patients were approached. Reference will be made to the material in the Discussion, but a more complete evaluation will be published at a later date.

RESULTS

From Figure 1 it can be seen that a similar pattern of scores was obtained from all three of the instruments used. There was a tendency for some improvement to first take place between the preliminary assessment at referral and the evaluation at the commencement of the course

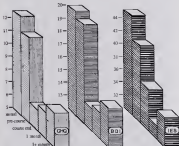


Figure 1. Mean scores on the General Health Questionnaire, Beck Depression Inventory and Impact of Events Scale: initial contact, start and end of course, and two follow-ups.

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Operational Medicine

Operation Harlech, September 1995

A. R. Gibson

In the summer of 1995 the epidemic of Large Southern Yaws in Chamorro Park, Misamis Oriental, with a threat to the inhabitants of this British colony in the Liguasan Islands of the Comoro archipelago, necessitated the island was cordoned off. Emergency evacuation camps were prepared on neighbouring Atigapa.

In July the island's Government ordered evacuation of the most threatened area, the southern third of the island including the capital, Porempu. Some measures left the island completely, the rest were accommodated in the north of the island by friends or in makeshift emergency clinics. The majority of these clinics were either schools, or churches. There was no coordinated plan for the provision of health services and as a result this took three weeks to complete. The Medical Officer from PMB (Singapore) was deployed on the island for a short period and was able to assist in preparing a casualty facility in the north (Gibson) (see our Service News). The hospital was moved to a school at St John. Many buildings were designated as a casualty department and operating theatre.

By the end of August the patients who were studying the volcano moved down the coast. It was now felt that the north of the island would be safe even in the event of a major volcanic eruption.

MEDICAL SQUADRON PREPARES TO ASSIST

A Liguasan Task Group of the Comoro Islands Regional Royal Marines, including the Medical Squadron of which I was one of the medical officers, was tasked to provide assistance. The true extent of the health problems

was not known precisely when personnel and stores were being assembled on place were made around a worst case scenario. It could easily happen. The storm was blown into Atigapa by the SLP and cleared around.

In early September ten members of Medical Squadron, arrived via Misamis. Officers remained on Atigapa. I was tasked to assess the health problems in Misamis and to set the scene of Medical Squadron to reduce them. Two members of the RASC Environmental Health Wing were attached. Data collection and exposure were of particular value.

HURRICANE LUIS

As soon as the medical team arrived on the island the emphasis of the operation changed because a powerful hurricane, Hurricane Luis, was heading straight for Misamis which is PMB.



Surgeon Lieutenant Andrew Gibson, Medical Officer Medical Squadron, and Corporal Bill P.M. both of the Comoro Islands Regional, on the island of Liguasan, Misamis Oriental, during Operation Harlech 1995.

Surgeon Lieutenant Gibson, a medical officer with the Comoro Islands Regional, Royal Marines

had been discovered by Plymouth Wings which caused the death of five people on the island and left a sixth barely a foot or a hand's grasp. Local member Bernardi advised that the disease was more bitter and stronger than flu, with more of death than illness at its core.

Not surprisingly, there was considerable anxiety among the children. Many were living in temporary shelters. 20 or all away from their own homes. The immediate priorities of some of the children was unknown. There continued the old culture and initially retained staff as these children were expected to be lost already without the extra problems caused by the battle. Two members of Medical Squadron joined local staff to help children in need in the morning run and provide general assistance for the duration of the invasion. Another MA was attached to the Plymouth Defence Force to provide medical cover if they were called to any emergency. Another member of the Squadron had himself recruited, as the base hospital to provide a casualty receiving station in the local police station.

Fortunately in the last moment Plymouth was saved from the expected worst scenario was achieved and, although there was significant damage to property, there were no casualties. Nevertheless, the members of Medical Squadron was much appreciated by the staff and residents of the shelter. On August the main hospital was badly affected by the staff and residents of Medical Squadron who had remained there caused a major and for a short period in general during the day.

RE OCCUPATION OF SOUTHERN MONTERRAT

Early in the deployment members of 43 Cde had made a landing was into the base of the camp to position the landing devices to assist the workers working the volume of the ship to better understanding of it. Shortly before the base was struck, these workers decided that the danger had diminished and a sudden response was made and moreover that continued monitoring would give up to 48 hours warning of a major crisis. The Governor of Montserrat ordered a partial re-occupation of the affected part of the island and shortly afterwards pointed out that re-occupation allowing people to return to their homes in the south of the island.

The Medical Squadron now had to take the lead in re-occupation of the hospital and residential house built in Plymouth, provide a daylight house

community facilities that town and the relocation was complete, prepare staff by facilities in the south of the island in case of a repeat evacuation and increase the evacuation plan.

As the relocation back to Plymouth was planned, we might as well, to manage the local health personnel to avoid the difficulties which had caused the evacuation. We managed to move the complete hospital to 48 hours and the patients followed in a combination of numbers and ambulance during the evening of the second day. There was some local resistance to relocate the residents of the residential house for the old and infirm, the Plymouth Maritime House, from their shelter, an adapted community centre at St. Peter's, to its, another was sent to the hospital. Royal Marine members standing a school bus increases the apparent lack of suitable transport and the process, knowledge was reduced.



Medical staff and the 43 Cde staff in the south of the island. Left to right: MA's staff, David Firth, the group, Lieutenant Colonel MA Thomas, P2004, Taylor and MA, Brantford.



Royal Manners helping to move a patient

It was difficult to find a suitable site in position viewed by hospital on the north of the island. The only well constructed buildings were either schools or churches. Several options were considered but it was clear that no single site would be perfect, thus the end result would be compromise. Those who expected a brand new hospital to appear overnight were disappointed — it was not in our ability to guarantee much local government and the limited size of the facility the rural area.

Two teams from Medical Squadron were formed. One developed the ready hospital inside a school building, the other procured a canopy and minor treatment facility along with an emergency operating theatre in a nearby nearby school. The construction team was based around my treatment bay so. The rest of the stores came from CIMA emergency supplies.

Engineering support from 88 Independent Commando Squadron 88 approved the systems and storage facilities in the building. Despite the problems we found in the north of the island a road by handily which could be completed within 12 hours and built to suit effectively if a further evacuation of the hospital to Pylsworth was deemed necessary. We linked a note to the DDA, who were to coordinate the local processing of the hospital with the Chief Medical Officer. Once this was complete the Medical Squadron detachment returned to Agona to prepare for the return to England.

REFLECTIONS

Operation Harlech was a very enjoyable and challenging deployment for a medical officer. Although there was only limited clinical work, it was a fascinating insight into the problems of health care in developing countries. Nearly all the problems stemmed from a lack of medical and community local forward planning. Many of the things that doctors in the United Kingdom take for granted were either absent or in very supply. On an individual basis the doctors and nurses worked hard to provide the best in circumstances and circumstances. Even at the worst moments of the crisis, local medical care commensurate with the requirements of the patients and the medical staff on the island, was available.

As doctors of the Medical Squadron detachment, I have been involved in many aspects of the operation other than the areas described above. I advised the local government authorities on matters of hospital design and tasked the engineers to improve the road to hospital facility. During meetings with the Health Minister and then Malawi's Governor I presented advice on planning in health matters. I was able to understand why conventional health experiences a shortfall in this type of operation.

Meanwhile, members on the deployment, as the situation to maintain but one in particular group, to read. On arrival in Agona, tired and hungry from a long flight unaccompanied to the appropriate time we completed inspection and then by the end everyone was exhausted. After a short break a working party of 18 was requested immediately 28 Royal Manners stood up. It is the kind of determined and uncompromising attitude that makes serving with Royal so rewarding, so a chance.

to mean daily of three months). Subsequently the programme produced no further reductions in scores, which have now stabilised, during the follow-up period.

A scale at five and above on the General Health Questionnaire is considered to reveal the existence of psychological dysfunction; it will be observed that the mean scores obtained failed to drop to this level at any stage of the programme. Nevertheless, there were improvements with an overall analysis of variance (ANOVA) showing the differences across time, of testing to be significant beyond the 5% level ($F=8.94$, $df=5$, $p<0.001$). Post hoc tests revealed that there was no significant difference between the pretest and pre-course scores, but that all other measurements produced significantly lower scores than at referral.

In dogmatic terms patients performed better when assessed by the Beck Depression Inventory. A score of 13 and above is used to diagnose depression on the BDI. Although at referral the mean score was just below 20—only by the three months follow-up when scores were tending to climb again, the mean failed to reach the diagnostic criterion. As with the GHQ, an ANOVA showed a statistically overall effect ($F=3.85$, $df=5$, $p<0.001$) with no significant difference between the first two assessments but with statistically significant differences between three and the rest (see Table 1).

For the purposes of this initial evaluation the sub-scores of the Impact of Events Scale have not been analysed separately. Instead the overall score has been used, which (Briere) shows implies a score. The third distribution of Figure 1 shows that the average scores after full 12 sessions dropped to level. However, difference and depression scores were, once again, apparent (ANOVA, $F=4.73$, $df=5$, $p<0.001$), but with the last month follow-up being the only stage at which scores were up infinitely lower than at the first two assessments.

DISCUSSION

Perhaps, the most obvious feature of the results is that, with the exception of the BDI, almost none of the scores fell below the diagnostic thresholds. This finding might lead to the conclusion that the course was not effective. However, closer examination shows such a statement to be simplistic.

The depression scores are particularly informative. Although depression is not a diagnostic symptom of PTSD it is generally

present, and these data can be seen to mirror most of the time course of the PTSD recovery. The existence of depression in a patient suffering the pains of PTSD is not surprising, the fact that the depression levels were reduced to below clinical levels by the programme is most—as is arguing first at later follow-up, when the full responses suggested that patients were experiencing some typical PTSD symptoms—unexpected. Depression had not occurred. This suggests the patients had learned to live with and to control the experiences, so preventing them from causing significant disruption.

The BES scores lend credence to the explanation that patients were coping to some extent with these experiences; the scores differ from the others in revealing their lowest level six months after the course. The scale can be considered to reflect the emotional processing of the trauma; the persons whereby emotional disturbances are identified and become sufficiently far from experiences and behaviour to prevent further disruption. While the process of recovery is individual and personal the PTSM course offers emphasis on group support. However, it provides an environment which is opened to accepting and discussing the painful experience. Experiences which typically would previously have been avoided. However, looking at the recovery of the group the course can be regarded as a kind of 'intensity'. It is likely that patients progressed by these means more, which they began to bear three months immediately following the course. Having finally left the group they are forced to become self-reliant, and are thus likely to continue with the negative processing which will render their experiences tolerable.

The BES scores began to climb again at a later follow-up. There is no statistically significant difference between the rest and their second night, but the slight start at three is apparent in all the measures and is undoubtedly a real effect. The initial improvement on the full after completing and leaving the course suggests that the subsequent change is not a result of leaving the group per se. However, these records record individuals, most inevitably be vulnerable, and for some the general pressures of everyday life do doubt begin to bear an impact. It is probable that those of less are only relaxed by some of the patients, but that those not included are more likely to react at follow-up by reflecting the rest of the effect on the group mean. It will be observed that only 50% of the total symptom group have returned to provide data at the

these months, stage, anecdotal evidence suggests that of the remaining 125, the majority were coping very well.

There are two weaknesses inherent in this study, both of which are inevitable, given the nature of the data available to the evaluation team. First, as indicated above, beyond the two months follow-up the sample size drops considerably. Second the nature of the data is such that it is possible for patients to be referred from all over the country. The long journey required would seem worthwhile to those with a significant level of PTSD, but the measure to attend would be for less severe engagement and less engagement. Of course, the measure would also be low if time had intervened to pass without the patient deriving any benefit from the course themselves. While case reports were being requested for this report it was observed that only 25% of patients returned for a 12 month follow-up. For these the average GHQ and RHA scores were higher than in initial assessment. This observation supports the claim that the patients who do not return are those who find no need to do so. This explanation is consistent to be correct by the Haslar staff, on the basis of the small number of contacts (telephone or mail) which has been possible with non-returners. Clearly, no essential comparison of key measures to arise from this study will be to compare an extensive follow-up population of all ex-patients.

The second difficulty with these data is that there was not an appropriate comparison group. In its absence it is possible to claim that the patients would have recovered in the same extent had they merely remained on the waiting list. Although technically feasible, this comparison is believed to be inherently inappropriate. It is true that some small, statistically non-significant improvement in symptoms occurred during the pre-course waiting period (perhaps through optimism about the treatment help). However, this slight change contrasted markedly with the statistically significant improvements which took place over the period of treatment. It should be noted that the course duration was only one third of the mean time spent on a waiting list, yet the reduction in symptom scores was not more greater during the treatment than during the waiting period. Moreover, two of the three questionnaire scores not completed in the one month follow-up. This effect is difficult to explain if it is assumed to have appeared a few courses which had been without therapeutic impact. It is therefore concluded that the course

did indeed alleviate symptoms, but that, in entering the more normal civilian world, some of the symptoms returned.

Other measurement tools, developed at Haslar but not described in this report, confirm the impression that the majority of soldiers who pass through the programme experience considerably lessening. Conversations with ex-patients reinforced this impression, men who had broken down, crying and shaking uncontrollably when they had first described their symptoms as 'anxious', were able to recount the events in the same without significant distress. The patients speak lightly of the course and its personnel. A particularly valuable theme in the use of military and civilian patients. Many of the military soldiers described a sense of being cut off from the real world, they returned from a sense of bloody conflict to family and friends who were leading unproblematic lives and who would never understand what had happened. Not only does the course encourage the participation of patients in bridging the understanding gap, but it also shows the nature, attitudes and values that it can foster in civilian life. Experiences are shared and health develops. At the same time, by taking place in a rural setting, the course applies the military context important to the service personnel. Patients speak of the value of being able first to recount their harmful stories to a support group, who understand what we're talking about, in a way which a civilian psychiatrist never could.

CONCLUSIONS

This evaluation of the Haslar PTSD database has shown that useful information may be obtained from the case notes. The programme personnel had not had time or opportunity to evaluate the data they had collected, but this first appraisal demonstrates the value of the unique programme developed by Sergeant Captain D Connell and his team. There can be no doubt that the courses have significantly improved the lives of many PTSD soldiers. However, it is not clear precisely which components of the course are the most effective, any studies on length of optional use, which data they used, processing, how many of the questions raised in the introduction. Nevertheless, it is clear that both the treatment and its environment should continue. In this way there will be two-fold military benefits: from the direct assistance to military personnel and from the greater understanding of PTSD which will result.

Integration in the South African Medical Service

P A Russell

We shall build the society in which all South Africans, both black and white, will be able to work and without fear in their hearts, a modern nation in peace with itself and the world. (President Mandela, inauguration speech 10 May 1994)

INTRODUCTION

The creation of a unified defence force is of fundamental importance to the process of Nation Building in South Africa. However, brought together are units that until recently were situated in a complex web of long-styled segregation and control by all rules. Following extensive consultations between military and non-military forces and under the strategic planning of the Joint Military Coordination Council (JMCC) (the South African National Defence Force (SANDF) came into existence on 27th April 1994.

On 8th April 1994 the South African Transitional Executive Council (TEC) issued a formal invitation to the United Kingdom Government to assist in the process of integration. On 15 June 1994 British Military Advisory and Training Team (BMATT SA) formally operational.

This article aims to outline the procedures and events involved in integration and the part played by BMATT SA medical team in the integration of the South African Medical Service (SAMS). It has not been possible to give a comprehensive account of such a complex process and, has therefore been necessary to include much of the first draft. However, it is hoped that the reader will gain sufficient insight into the role and the process of integration. Further extensive integration issues in a very brief outline at end of South Africa's recent political history will be given in the process of context. To assist the

reader a glossary of abbreviated terms is supplied (see Appendix).

RECENT SOUTH AFRICAN POLITICAL HISTORY

- 1984** Chief Buthe and his warriors led the last armed resistance by Afrikaners. In opposition to the introduction of a law that the people took up arms against the British. His army was turned down by machine guns and handbombs handed out to a defence to collect.
- 1988** British colonists and their supporters established the Union of South Africa.
- 1992** Founding of the African National Congress (ANC). The ANC's aim was to bring all African peoples in one people to defend their rights and freedom.
- 1993** The National Land Act. This prevented black Africans from buying, leasing or using land except on reserves. The non-own and employment of Africans became severely restricted and controlled with the introduction of passes.
- 1994** The National Party won the election. Apartheid became official.
- 1995** The ANC launched a defence campaign against white only rights.
- 1996** The Congress of People adopted the Freedom Charter, which demanded the rights of land, housing, employment and education.
- 1996** As a protest against the Pass Laws, 20 000 women marched on the government buildings in Pretoria.
- 1998** The formation of the Pan African Congress (PAC). The PAC wanted to spread to Africa for Africans and no one else. Unlike the ANC they opposed communism and the Freedom Charter which they declared violated the principles of African Nationalism.
- 1999** Police shot six protesters in Sharpeville when a PAC organized march took place in protest against the pass laws. The ANC and PAC were banned.

Author any of writing Lieutenant Commander Russell (GMP99) was serving in the second year on the BMATT medical team based in Pretoria, South Africa.

- 1961 Party is a reaction to violence against peaceful protest and the banning of the ANC and PAC. Mandela, Mr. Kame (JG) was established under the leadership of a Johannesburg lawyer Nelson Mandela.
- 1962 Nelson Mandela arrested.
- 1964 Following the Rivonia trial Mandela and other leaders were sentenced to life imprisonment.
- 1976 Student anger and protests against Bantu education, imposed the Afrikaans language in schools triggered Biko's. Biko was shot and Biko's funeral and other anti-apartheid. The riots did followed throughout the country till 1980 died.
- 1977 The death of a Port Elizabeth police officer, of Steve Biko.
- 1984 A countrywide uprising against apartheid began. A state of emergency declared.
- 1986 President F. W. de Klerk addressed the ANC and 50 other groups. Mandela freed after 27 years in prison.
- 1991 Apartheid abolished.
- 1993 Chris Hani assassinated. Mandela and de Klerk won the Nobel Peace Prize.
- 1994 The ANC won the first democratic election. Mandela became president.

SMATT SA

SMATT SA, currently consists of 75 personnel drawn from the Royal Navy, Royal Marine, Army and Royal Air Force. Of these most key personnel are on post for two years and the remainder are on six month tour. The whole unit is under the Command of Brigadier C. H. Miles CBE DSO/DFC who is responsible to the UK Chief of Defence Staff. The primary role of SMATT SA, is to assist in the process of integration of the two statutory forces: JRF and National Peoples Liberation Army (NPLA) and the former statutory homeland forces, the Transvaal, Natal, Bophuthatane, Venda, Ciskei (TRNC), plus the former South African Defence Force (Figure 1). The National Freedom Party (NFP) have recently stated requirements for the integration of approximately 2000 members. Biko's left Protection Force members. However, the process will not take place until the scheduled 1995 units of MR and NPLA members has been completed. In fulfilling the primary role SMATT has three principal tasks.

The maintenance of criteria and standards against which individuals are to be evaluated

prior to placement in the SAMSF.

To monitor movement, selection and training areas all three arms of SAMSF.

To administer of discipline cases between the parties involved in the integration process.

The medical component of SMATT presently has five members, which include a medical officer (armed force) nursing officer (medical training officer and Warrant Officer. The team is coordinated and led by the medical officer. It is the responsibility of this team to carry out the above tasks in the integration process of the South African Medical Services.

SAMSF

The South African Medical Service is a fourth arm within the defence force. The other three arms of service are the SA Army, the Royal Air Force. SAMSF has been an independent service since 1974 making this unique apart from the only independent defence medical service in the world. SAMSF not only caters for the serving personnel but also for the dependants of personnel. These numbers, various and includes care for police and prison services. It is estimated to have a patient load of 150 000.

SAMSF being an independent service must cater for all its own needs, and therefore has a very diverse number of occupations. Most of the 52 employment groups currently exist, from professional nurses and doctors to medical assistants, clerks, drivers, cooks etc. The service



Figure 1. The Integration Concept

also includes a psychology, social work and veterinary department.

SANDEF is a widely distributed organisation in a country of considerable size. It is almost 2000 km from the Limpopo river into Mozambique. Agaples in the north and 1700 km from Durban to Port Mankook in the West. There are currently three military hospitals, six military base hospitals, 48 heli, four, 50 military medical clinics and 17 veterinary clinics. In support of these are a military health academy with a training centre and nursing college, seven medical facilities including a special services hospital, a large medical depot and supply organisation, a technical support unit, and three specialist military, maritime medicine, aviation medicine and military psychology. A medical staff college is proposed for the future. SANDEF is headed by the Surgeon General, Lieutenant General D P Koozele MSAN SM SCB SM (MSM) (MS) who is a full member of the SA Advisory Committee on Health and of the SA Medical and Dental Council.

STATUTORY AND NON-STATUTORY FORCES

Preparation for the merging of the former statutory and non-statutory forces was coordinated by the Joint Military Coordinating Council (JMCC). Its function was to write the guidelines, generate integration and to oversee planning, preparation and training of the new SANDEF. At the service level, integration in SANDEF is coordinated by the Senior Medical Area Operating Committee (SMOAC). One objective is to complete the integrated SANDEF health system within preparation, done in Phase 1. One of the key decisions of the JMCC was that the former statutory forces would retain their training roles and that the members of the former SANDEF would be assigned to the new SANDEF.

MEMBERSHIP AND TRAINING OF NON-STATUTORY FORCES

Membership of the non-statutory forces (NSF) received variable levels of professional and military training. While many members of RMA and AFSA received professional medical and nursing training at health Africa and continued to work there as an undergraduate capacity, others were sent out to live the country and continued to work in support of their organisations in exile. Many underwent professional training in countries such as Russia, Cuba, Bulgaria, Angola

Table 1. Comparison of an integrated SANDEF

Force	Number	Percentage
SANDEF	6650	73
MS	1850	20
AFSA	450	4.4
TOM	140	1.5
BCP	170	1.8
WOP	70	0.7
COP	80	0.8
Total	9990	100

Persons near these figures are approximate only.

and Tanzania. Although much of the training was of a good standard, not all professional trust to merge the requirements for integration with the various statutory bodies, such as the SA medical and dental or nursing council. This, together with the disadvantage suffered from being out of country, has complicated integration for many members.

Many of the former NSF members received a considerable amount of military training. This training was primarily designed to fight and support a guerrilla war but, particularly for the MS, it also served as preparation for the eventually forming the exposed new armed services of SA. A smaller group of non-statutory personnel, mostly those who joined the organisation late on in the process, were given little or no military training. However, under the new constitution, each member of the non-statutory forces whose name appeared on one of the former non-statutory forces. Created Permanent Reserves (CPRs) introduced by 26 April 1994 would automatically become a member of the SANDEF with effect from 27 April 1994 regardless of former training. The completion of the system was the responsibility of the non-statutory forces and just over 2200 members were registered on the medical CPRs. No members were permitted to enlist on the CPR after 28 April 1994. Those members whose names appear on the CPR, are being gradually assimilated before undergoing a process of integration.

THE INTEGRATION PROCESS

The process by which an individual of a NSF becomes a fully integrated member of the SANDEF has several stages.

The first stage of the process is to classify members on the CPR. This is carried out by the former MK or AFSA Chief Integration Coordination Officer (ICCO) based at SAIMS HQ in Pretoria. To meet the flow of migration and prevent a big pile, only a limited number of personnel are released at a time. At present the target is 50-70 members per fortnight.

South Africa is divided into nine provinces (Figure 2). Each Province has a Regional Integration Coordination Officer (RICO). These are SAIMS officers who were formerly in the MK. The role of the RICO is to locate the members and arrange for them to be transported to the SAIMS assembly area in Pretoria. Difficulties in locating personnel have resulted in the regional targets not being met, presently approximately 33 members are arriving at the assembly area each fortnight. Over the member arrival in the assembly area, the Provincial Integration Officer and Reception Dept

(PROMD) release all the members. Details on computer and each member is given a medical examination.

A file containing each individual's details is created and maps indicate a workplace varying from manufacturing of MK or AFSA. The member must also provide a CV and indicate all school leaving certificates and qualifications of professional qualifications. Those who for a variety of reasons did not achieve the required level or who cannot provide evidence of having done so must undergo a culture free potential test (Kwena Standard Progression Measure) and an English test, passing to a predetermined standard. Those who are medically unfit or do not meet the educational requirements are given a demobilisation package.

Once documentation has been completed, the individual attends a placement board. The board consists of a former MK or AFSA officer and a former SAOP/SAMS chaplain plus a



Figure 2. Provinces of South Africa.

BMATT member for the purpose of emergency and in situations where necessary. Other members may be present as an advisory capacity only. The placement board may consider each member's qualifications, experience and personal and career prospects, while the points would have indicated that they have completed a three and four RANM Development syllabus under the previous system and that he takes this course. The board must decide what employment group the person should be in, their functional level, eventually rank, their military rank, pay band and authority and in which personnel they will be employed.

Immediately following the placement board members meet with Bridging Training Review Board (BTRB). The composition of this board is the same as for the Placement board. An example will help in illustrating the importance of Bridging Training.

All have been a member of the MN for eight years. She is 27 years old and has good school leaving qualifications. Since leaving school she has worked as a bank clerk in the Eastern Cape. After joining the RN she received some informal military training, gained a few air certificates and acted as a courier and floor wiper. At the placement board it was decided to place her as a military personnel (General entry) with the military rank of Sergeant and the way to move to the Eastern Province Medical Command. The reason for this decision was based on the points that had the ability to be a member of BTRB when she joined the RN she would have been just seven years' experience and promotion and could therefore have expected to reach the rank of Sergeant.

It is clear that this member with no formal military experience or training will be unable to effectively operate as a Sergeant. She must therefore carry out all the functional and military courses to allow her to do so and the BTRB decides which courses she should do. She will then be pulled forward to such as a point is valid to complete these courses. Under the terms of the BMCC this member will only have two months to give such course. Should she fail at the second attempt she will be deemed unable to operate at the level of Sergeant and may be discharged from the service.

To ensure competency BMATT is involved in a variety of other boards including appeal board, assessment board and continuing board designed to take account of any adverse differences in the integration process. A variety

of additional tasks including the monitoring the medical examinations and personal testing in the military areas are also carried out by the medical team.

Once members have been placed and have returned to their units it is important to monitor how integration is proceeding at unit level and the BMATT medical team try to visit all commands and report back on a regular basis. These visits often reveal some of the deeper and more complex issues related to integration including attitudes and a lack of understanding about the process at local level. Some of these issues will be briefly outlined.

TRUST AND MISTRUST

During BMATT visits it is clear that there continues to be a degree of mutual suspicion and mistrust. While the new statutory forces tend to understand the process of integration, the statutory forces and in particular the RVC forces are reluctant of the process. This problem is exacerbated when former RFP members have to be supported by power staff because they have not yet completed their bridging training. Former RFP members also have difficulty in integrating as a result of no military experience with complicated rules and regulations. This mistrust leads to there being limited or uncoordinated, when in fact it is mostly a lack of understanding. The whole issue is complicated by the social distance held by individual groups and the attitudes often negative stereotypes. The process of integration cannot happen unless these differences slowly be bridging the different groups together.

In an attempt to change attitudes and reduce negative stereotypes the Human Resources Support and Development Services, set up by the Directorate of Psychology and Leadership of Naval Work, have introduced the Psychological Integration Programme (PIP) throughout the RANM. This programme aims to understanding of the negative attitudes and stereotypes held by black and white groups through the use of group exercises and discussions. The full PIP course lasts four days and provides a forum of feedback, developing an awareness of diversity, examination of prejudices and stereotypes and finally team building. The course does not pretend to be a panacea for the resolution of all problems but is an opportunity for individuals to begin a process of developing new and positive attitudes. While the organisation of the PIP course is proving to be difficult, most of these

who have attended a POP course have found it a positive experience. BHMTT has been involved in the selection and monitoring of the programme. However, if the process of developing mutual understanding was to proceed and momentum for the SAHMS course continues to develop, more building of trust and mutual understanding effectively in all members at all levels, to promote trust and genuine understanding.

LANGUAGE DIFFICULTIES

During visits to campuses and training institutions language has consistently emerged as an important and sensitive issue. The problems of communicating effectively in a country that is multi-lingual are well recognised at all levels of society. Since the elections in April 1994 there are 11 officially recognised languages. The media can be divided into four major ethnic language groups. The Afrikaans group (very strong in the central western region) includes the Nama, Zulu, Xhosa and Ndebele languages. The Sotho which includes the Tswana, Zulu and Basotho speaking people are situated in the Transvaal, Northern Cape and Free State. The final two groups are the Venda and Shona peoples of the northern Transvaal. The white population is divided into Afrikaans speakers and English speakers with Afrikaans as the principal language of the whiteboards and English for the Asian population. While most of the black population speaks English and Afrikaans as well as their mother tongue, their ability to do so is variable and has the added complication of resistance towards Afrikaans following the Bantu Education Act marking on the teaching of Afrikaans in all schools. This was how it has developed.

The complex environment poses particular difficulties in teaching groups of students whose mother tongues are often different. The SAHMS training colleges although not unique, serves as a useful example of some of the problems experienced with language. Here a number of former non-separatist rural members study four year nursing diploma course have listed their 1st common experience. At the medical conference board it was clear that these members identified the problem as not being able to understand fully the communication/teaching given in Afrikaans. The reason for their failure cannot be attributed to lack of intelligence, it is the mother's perception and more probably a communication factor. Other nursing courses at the

SAHMS Academy and other SAHMS nursing institutions have reported dissatisfaction with the Afrikaans language used for teaching.

The language policy of the National Defence Force although open to negotiation, does offer some guidance on the use of language for the purposes of command, control, management and training. It is based on three important criteria. Firstly, applicability: that is the language best understood by the majority of the target group or required for technical reasons. Secondly, where the chosen language is not understood by the majority, there should be communication in an official language that understood clearly and used appropriately the final test, at whatever it is who must understand the communication does so.

One of the implications of the policy is that the English and Afrikaans language used for teaching by the SAHMS Academy in the four year diploma course does not fully comply the SAHMS language policy. While teaching in Afrikaans is a target group comprising mostly of Afrikaans speakers, teaching the applicability criterion within SAHMS policy is well increasingly disadvantage the minority of the groups whose Afrikaans is very poor and fails to meet the effectiveness criteria in the final test.

It should be noted that the SAHMS nursing college has undertaken to meet the needs of all students and has, where students have failed students set up a comprehensive remedial programme. This has included some remedial work in English and Afrikaans as well as study skills. However further consideration needs to be given as to how the problem can be most adequately addressed in the long term. Any developments should be seen in the light of the ongoing and rapidly changing culture in which the training of different groups will increase and not decrease over time. An ongoing language and communication strategy for the teaching of nurses needs to be developed. It should meet the needs of all students and not disadvantage any one group more than another. Communication also needs to be given to how best to teach a professional group that can communicate effectively with the international medical community.

The BHMTT medical staff too, as far as possible, need to take an objective perspective on the problem and have utilised some recommendations in a way forward has ultimately believed that English will need to be the language of instruction. It is believed that the SAHMS is also beginning to move in this direction. However change, is always difficult

specially if it means giving up working practices that have been used for many years and this change is likely to meet resistance especially from the Afrikaans speaking section of the defence force community.

CONCLUSION

It has not been possible to explore all the issues relating to integration but this paper has offered an outline of the process involved in the integration of the two military and statutory medical forces into a new and unified SAMM. Although a vast array of problems emerge from such a process it has only been possible to explore two, the problems of developing trust and the difficulties associated with language. However, it is hoped this gives some indication of the types of difficulties that continue to confront the parties.

What is taking place in the South African defence force is a possible template. To integrate old enemies into one defence force has taken courage and insight. Patience and understanding

are required by all concerned and it would be naive to expect such a process to proceed without some good major difficulties. However, what I have witnessed has been a positive effort. From all accounts for a successful outcome. The UK is prepared to have been chosen to assist in South Africa's unique integration concept. SAMM has played a small but significant part in the establishment of a new defence force in South Africa with the medical components playing their part in initiating the SAMM into the process of integration.

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Appendix: Glossary of abbreviations

Glossary of Abbreviations

ANC	African National Congress
APLA	American People's Liberation Army (armed wing of PAC)
ETBB	Endings Training Meeting Board
SMATT	South Military Advisory and Training Team
COO	Chief Integration Coordination Officer
CPH	Combined Personnel Register
EP	Endings Education Party
JACC	Joint Military Coordinating Committee
MA	United Democratic Front (Special of the Nation's armed wing of the ANC)
NDF	National Defence Force
NSF	Nor Military Force
PAC	Pan African Congress
PG	Provisional Board
PMODS	Personnel Management Office and Recognition Office
ICCO	Integrated Integration Coordinating Officer
SA	South Africa
SADF	South African Defence Force (pre 1994)
SAMM	South African Medical Services
SANDF	South African Defence Force (post 1994)
SMJOC	Senior Medical Joint Operations Committee
TRAC	Training, Recruitment, Retention & Career Development

Clinical Management

Ankle replacement: true dawn at last

P H Loxley

(Based on the author's report to the Grindstone Society on his recent visit to Dr Frederick Buschel MD)

In December 1993, with the aid of a Joseph Thomas grant, I was able to visit Dr Frederick Buschel in South Chicago, New Jersey, USA, to observe an ankle replacement operation and had the opportunity to discuss the design, development, indications for and follow up of the Buschel-Pappas Total Ankle system.

Ankle replacement has had a poor track record. Analysis has shown that the long-term results of this apparently simple large site, in fact rather more complicated than at first realised, in particular physiological rotation of the tibia on the fixed (weight bearing) talar potentially generates significant torque at the bone prosthesis interface of a fixed component. This can be overcome with a spherical bearing design, but this is more mechanical and results in unacceptable instability. In addition, movement of a rigid bone segment of the talar dome may lead to collapse of the talar component. Accordingly, the standard orthopaedic view, up to now, against ankle replacement, supporting fixation of a more plastically deformable, increasingly particularly in the USA, patients are demanding a more functional alternative to fusion.

Dr Buschel and his mechanical engineering partner, Dr Michael Pappas, have developed and refined a number of joint replacements. Best known probably the Low Contact Stress (LCS) knee replacement. Essentially three philosophy is to maintain the contact stress on the plate bearing by following congruency throughout the greatest possible range of movement while simultaneously maintaining constant forces by allowing bearing mobility. If this can be achieved, polyethylene wear and prosthesis

loosening will be reduced and possibly eliminated.

Their experience with ankle replacement started in 1974 with a cylindrical design. This failed because lack of axial rotation of the prosthesis caused increased stresses at the tibial component/bone interface and early loosening. In 1977 the cylindrical ankle was refined with a talaron bearing forward tibial prosthesis and polyethylene spacer. This reduced axial stresses and allowed some tibial glide but failed to address anterior posterior clearing. Moreover, long term survival was achieved in the few cases in which this design was used. In 1981 Buschel and Pappas introduced a congruent contact, non-rotational, movement of ankle replacement (The New Jersey LCS Total Ankle Replacement (or Pro)). This was designed for non-rotational movement. Tibial and talar components were made of cobalt-chromium-molybdenum with a polyethylene bearing. The tibial component was a flat plate with a dome apex. The plate angled posterior inferiorly by 7 degrees. The talar component had a shallow medial sagittal sulcus, was wider medially and was anchored in the tibia with a single malleolus fix. Ten year survival using cement as an end point was 94.6% in a series of 48 ankle replacements. Age range was 21 to 69 years (mean 55) and a mean follow up of 73 months. 67% had good to excellent results (good clinical objective criteria). In comparison with other ankle replacements, these results are outstanding. Inevitably there were several complications (as one would get with ankle fusion). Specific complications included subluxation of the bearing and talar component subluxation.

In order to overcome these problems, design modifications were made. The sagittal sulcus was deepened to provide more bearing stability. The

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able component was modified with two fixation tabs rather than one. The bearing surfaces comprise yet mostly uncoated and uncalcified bare titanium that under normal walking loads contact with a bearing surface of UHMWPE well within the tolerance of polyethylene. Tibial and talar components are made of titanium alloy. The fixation surfaces are covered with nitrided beads and the bearing surfaces highly polished. The surfaces are coated with titanium nitride. This metal is felt to have better bio-compatibility and better wear characteristics. There was no specific reason for changing materials. This is the Buechel-Pappas Total Ankle Replacement (Eli Lilly, New Albany, USA).

It was introduced in April 1989. A published series of 14 implants in 13 patients, aged 33 to 69 (mean 54) with mean follow up of 12 months reported no infections and good to excellent results in 14 patients. Six year follow up results are to be published next year.

Dr Buechel's personal series of Buechel-Pappas ankle replacements is now 58. Although a few patients have been lost to follow up, objective ankle scores appear to be maintained over time to six years. Several patients have returned to heavy jobs, eg. heavy pollution and truck drivers.

Indications for ankle replacement include post-traumatic arthritis, rheumatoid arthritis, osteoarthritis and avascular necrosis of talar. Leg length equality is no absolute pre-requisite, unless the uncorrected nature of the problem, refers an anterior imbalance. Considerable deformities are not a contraindication per se. Relative motionless should be obtained prior to ankle replacement if present. Complications include wound breakdown, nerve damage, reflex sympathetic dystrophy, massive osteolysis, hardware, intra-articular pain and deep infection.

It was able to observe Dr Buechel perform an ankle replacement on a 59 year old female

with post-traumatic arthritis following distal femur 15 years previously. She had a fixed equinus deformity with very limited range of motion. She agreed to an active life and had refused bones in the past so that it would last her anyway. Post-operatively the patient is placed in a walking cast for six weeks and weight bears as comfortable. The ankle is then supported in an initial splint for a further six weeks, followed by progressive mobilization.

With all the previous ankle replacement problems, there will inevitably be a degree of scepticism over the Buechel-Pappas ankle replacement until long term results are available. This is understandable. However, the long-termers behind the development of this prosthesis and the complete commitment of Dr Buechel's team to solid research, objective follow up and frank reporting of results, confirms that we do now have a viable alternative to total fusion, and that it is reasonable to offer ankle replacement to suitable patients.

I am very grateful to Dr Buechel and his team for their hospitality and for giving so much of their time. I would also like to thank Prof Bengt Lund for helping to arrange this visit.

Editor's Note

The Orthopaedic Society is an interdisciplinary club consisting of a central membership, generally shared to those who have worked in Oxford as Senior Registrars or Fellows. It has a developed regional membership and has a sound scientific and social meeting.

Each year the Orthopaedic Society offers visiting scholarships to help registrars elsewhere learn more of current or special interest. This author was awarded a Joseph Jacob Foundation Scholarship which allowed him to visit Dr Buechel's clinic to observe and obtain information on ankle replacement. Joseph Jacob came to Oxford from Rotterdam during the Spanish Civil War and was Professor of Orthopaedics in Oxford.

Case histories

Oesophageal Leiomyoma — a rare cause of reflux oesophagitis

P. E. Howden and E. P. Dewar, OBE

Synopsis

Reflux oesophagitis is a common condition encompassing a spectrum of symptoms. We report an apparently rare cause of the condition and highlight possible symptomatology that may be suggestive in the pre-operative diagnosis.

INTRODUCTION

Leiomyoma of the oesophagus is a relatively uncommon tumour with a typical age-group from autopsy studies of less than 50%.¹ These tumours are usually found in middle age and more commonly occur in the lower third of the oesophagus.² About half of the patients with leiomyoma are asymptomatic; the typical presenting symptoms include dysphagia and epigastric pain.³ Although leiodysplasia within oesophagus has been reported following excision of the tumour,⁴ there have been no previous reports in the literature of oesophageal leiomyoma in the cause of reflux oesophagitis. This case represents a rare contributing factor in the aetiology of reflux oesophagitis.

CASE REPORT

A 58 year old male was referred for investigation with a two year history of intermittent epigastric pain associated with nausea and reflux of sigmoid liquids. The pain was noted primarily after eating and was associated with nocturnal belching and regurgitation of water.

Over the last year this had previously been managed with full treatment courses of both H₂ antagonists and antacids with only limited improvement of symptoms. Last June he noted recurrence of symptoms on cessation of treatment. An initial diagnostic endoscopy for acid found no ulcer or reflux but found a polypoid lesion which allowed the reflux of gastric contents into the oesophagus. With the diagnosis of the associated oesophagitis there was no evidence of any other mucosal disruption, structural mass or obvious compression of the oesophagus.

He was commenced on a further course of treatment and advised that due to the history of less than typical improvement was likely to be required to obtain accurate symptoms. He subsequently attended for review at which time it was noted that there had been no improvement in his symptoms, and as a result of the frequency and severity of symptoms the patient requested further intervention. He was subsequently admitted initially for a Pilonus Endoscopy.

At operation a 7cm 'fist finger' lesion was noted as protruding to an 8 × 1.5cm circumferential tumour of the distal oesophagus. The tumour was excised without difficulty and a routine Nissen fundoplication was performed. The histology of the lesion confirmed it to be a leiomyoma.

The patient made an unremarkable post-operative recovery. At review six weeks after discharge he reported complete resolution of symptoms and total satisfaction with the surgical and medical care. At this time he subsequently reported that he now realised that he had in fact been suffering from dysphagia and gastro-oesophageal reflux as he had been swallowing only certain boluses of viscous, gel and food bolus. He now no longer had to swallow or to swallow down food or liquids.

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DISCUSSION

The soft tissue mechanism of the clefts consists of the lower nasopharyngeal sphincter and the fibers which either produce or the anteroposterior flattening of the submandibular space due to acute distended pressure. Failure of one component may be compensated for by the other. However, failure of both leads to the development of clefts nasopharynx.¹ The presence of an anatomical barrier at the distal nasopharynx and only through the normal myogenic function and hence sphincter pressure, it also reduces the overall sphincter length and length exposed to the persistent nature of inflammation. The probability of developing nasopharyngeal exposure to gastric juice and hence clefts nasopharynx under such circumstances has been estimated to be 90%.²

Distal nasopharyngeal incompetence provides a more theoretical anatomical barrier to the development of clefts nasopharynx, not previously reported. However, it illustrates that the two conditions may

coexist, and that this may not be apparent through pre-operative otolaryngology. The nasopharyngeal dysfunction of dysphagia and aerophagia may provide the clinical evidence of the abnormal distal nasopharyngeal mobility caused by the larvae.

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Chronic Myeloid Leukaemia and occupational exposure to benzene in a Royal Navy Submariner

M R Dean

Abstract

A Royal Naval submariner recently developed Chronic Myeloid Leukaemia after 15 years in the submarine service. The history of Royal Maritime Operations reviewed, the submarine's occupational exposure history in benzene with a new methodology, whether this had been a cause agent in the development of the leukaemia.

First nasopharyngeal repair reports taken from the submarines in which the submariner served, were reviewed to determine the incidence and median weighted levels of benzene to which he was exposed over the 15 year period. These were 100ppm³ and 100ppm³ respectively. To determine what increased risk of myeloid leukaemia was the

submarine's exposure to benzene in these levels it was necessary to compare this data with the results obtained from epidemiological studies of workers exposed to benzene in various industries.

Industrial epidemiological studies have proved statistically that benzene causes leukaemia, there occupational exposure levels of 100ppm³ (ppm) below this level there is no statistical evidence that benzene is a carcinogenic substance, as a result risk factor theories are required the use of mathematical modelling. The estimated range of increased leukaemia rates due to chronic exposure is 0.4-1.6 additional cases per 1000 workers exposed over a working lifetime of 40 years (Alderson 1989).

The estimated risk to the submariner using the positive reference lifetime level was calculated as 0.4-0.6 additional cases per all types of leukaemia per 1000 submariner. The observed rate of developing the test Chronic Myeloid Leukaemia from benzene exposure as a submarine is calculated to be extremely small.

Keywords: Chronic Myeloid Leukaemia; Malignancy; Navy; Occupational Medical Officers; 1986; Myeloma

INTRODUCTION

Recently a substance who had spent 15 years at the industrial source developed Chronic Myeloid Leukemia (CML). He questioned whether his leukemia had been caused by exposure to low concentrations of benzene while working at this source. CML is a cancer and rare disease affecting 1-2 persons per 100,000 per annum and a rare condition usually first in confusion but increasingly recently induced. Nevertheless, the substance was naturally concerned. Did we have a major problem on our hands? Was there a need for a detailed epidemiological study? The Institute of Naval Medicine was tasked with answering the substance's occupational exposure history and providing medical support. This article discusses some of the major findings of this review. Full details can be found in IPRM Report 80/4226.¹

AIM

The aim of the study was to determine if the substance was suffering from an occupationally induced disease.

METHODOLOGY

The study proceeded as follows:

1. A review of the industrial epidemiology of benzene-induced leukemias was undertaken, with a specific quantifying the risk to workers associated with low dose exposure.
2. The substance's occupational exposure history was quantified by extracting information from the atmosphere control reports held at INM.
3. His risk of occupationally induced CML was then assessed by comparing his exposure to that of the workers at the industrial epidemiological studies.

BURMAH ATMOSPHERE POLLUTION CONTROL

Before discussing the three major subproblems it is important to understand how benzene pollutes the substance's atmosphere and what level of contamination is acceptable. Nuclear powered submarines can operate closed for prolonged periods — around 90 days in a time. During this period volume (within homoeost) can still just limit the substance's enclosed atmosphere. The concentration of the contaminants will be low but continuous, and represents a unique pattern of occupational exposure which is the transferred from the standard

industrial exposure pattern — eight hours per day 40 hours per week. The level of contamination is controlled by diluting Benzene Potentially Contaminating Effluents during a 90 day period (MPC90). These are health based limits which are derived from studies of standards but are set at a lower level to reflect the unique exposure pattern of substance periods separated by periods of when based activities. The method of extrapolating the MPC limit varies from substance to substance but in the case of benzene it involves dividing the normal industrial eight hour exposure level (the MSH MPC90 level for benzene — 3 ppm) by a factor of 10 to arrive at 0.3 MPC90's 3 ppm. Full details are presented in IPRM3.²

While no pure benzene samples of the atmosphere are taken inside and over the Submarine Environmental Chemistry Unit (SECU) of Entry Potentials for consequence analysis. Air being drawn in atmosphere continuously (such as benzene) are reported to the Institute of Naval Medicine and back to the Submarine Squadron for remedial action to be taken.

THE INDUSTRIAL EPIDEMIOLOGY OF BENZENE

Overview

Benzene, the simplest aromatic hydrocarbon, occurs at very low constant levels in the natural environment. Therefore, it is a natural component of crude oil and consequently finds its way into petroleum products and a variety of compounds such as polycyclic aromatic hydrocarbons, dyestuffs, detergents, perfumes, and cosmetics.

Occupational Exposure

Chronic medical exposure to benzene is widespread in certain industries because of its presence as a component in many fuels, and its use as a basic chemical for organic synthesis. It has been estimated that about two million workers in the USA are potentially exposed to benzene.³ Most exposures are related to the coke industry, rubber industry, transportation, handling and production of benzene and/or petrol products. Use of benzene prior to the early 1970s — particularly as a solvent — often resulted in concentrations at workplace on of up to 500 parts per million (ppm) with peak values >1000 ppm.⁴ Over recent decades the frequency of personal exposure has probably around 90% is below 1 ppm.^{5,6} This reduction in exposure has come about due to the increased awareness of the health risks associated

with bacterial, and improved industrial hygiene practices.

Absorption and metabolism in the body

Absorption through the lungs is rapid. Secondly it has been shown that dermal absorption may also be an important factor.¹¹ Oily in the body it is rapidly distributed in the different tissues and has an affinity for organs with fatty tissue, such as the brain and the liver. However, it is metabolised within liver and excreted in the urine. Some of the liver disease problems are currently reversible and considered to be reversible for bacteria's liver effects on the body.

Estimation of health risks from Occupational Exposure

The acute systemic adverse effects recorded from occupational exposure to benzene are haematotoxic, immunotoxic, genotoxicity and carcinogenicity. In particular the development of leukaemia. A genomic imbalance can cause changes in the genetic content of a cell's chromosomes. The disturbance is considered to have given rise to the formation of cancer cells in a later stage. It is commonly believed that there is an absolute safe exposure dose for any type of genotoxic substance. In theory, acute systemic exposure to benzene may give rise to chromosomal alterations. However, in practice, very low doses pose an extremely small risk of the development of cancer.

Laboratory experiments have proved that benzene causes leukaemia in mice and rats. The human data have come from epidemiological and documented epidemiological studies of groups of workers who have been occupationally exposed to benzene. Increased leukaemia risk was identified in studies on the three main categories: chemical workers, and in oil refinery personnel. Most of the studies concerned exposure to high levels of benzene (in the order of 200-300 ppm over an 8 hour working day, 40 hours per week).¹² The latest period rates between exposure and disease for benzene-induced leukaemia ranged from 2-50 years. The most common type of leukaemia associated with benzene exposure is the Acute Myeloid variety. Other types have been reported however including the acute/chronic rate of CLL.

An elderly and the medical profession become aware of the potential hazards of benzene, the levels of exposure were reduced. Modern epidemiological studies have been able

to demonstrate a dose-response correlation between the level of exposure (taken as about 1 ppm), the duration of exposure and the incidence of all forms of lymphatic and haematopoietic cancer. However, below exposure levels of 1 ppm no statistical relationship between exposure to benzene and the likelihood of developing leukaemia can be shown. It has been necessary to extrapolate the data from reliable epidemiological studies using mathematical modelling, to provide an estimate of the risk below exposure levels of 1 ppm.

Several distinct sources have been carried out over the past few years. The American Conference of Governmental Industrial Hygienists (ACGIH) spread the work of Shirley et al.¹³ in their conference. For a worker exposed to average daily benzene concentrations of 10 ppm for 40 years, the odds of death from leukaemia were 135 times that of an unexposed worker. For a worker exposed to 1 ppm for 40 years the odds of benzene-induced leukaemia death were 1.7 times that of an unexposed man. Extrapolating the data, the odds of benzene-induced leukaemia death at 0.1 ppm approximate to the odds of leukaemia death for a worker who is not exposed to benzene.

A recent published review by the World Health Organisation¹⁴ concluded that a time-weighted average of 1 ppm over a 40 year working career has not been demonstrably associated with any increase in deaths from leukaemia. However, they recommended avoiding exposure beyond 10 ppm.

An interim review for the Commission of the European Communities¹⁵ came to a similar view. Using data from several epidemiological studies and mathematical modelling techniques the Federal International Agency attempted to re-evaluate the range of cancer leukaemia cases reported at differing low levels of occupational exposure. The review used the concept of ppm years as the concentration in ppm multiplied by the number of years of exposure (8 hour working day, 40 hours week, 50 weeks per year = 2000 hours per year). The mathematical model is shown at Table 1. It can be seen that the risk of developing occupationally related leukaemia is proportional to the exposure in ppm years.

It was concluded¹⁶ that the estimated range of 0.2-4.6 additional leukaemia cases per 1000 workers exposed to 1 ppm benzene over a working lifetime of 40 years (10000 ppm years) represents at best the present knowledge on benzene-induced leukaemia.

Table 1. Mathematical model.

Dose-rate year ⁻¹ year ⁻¹	Exposure year ⁻¹ year ⁻¹	Range of estimated leukemia cases per 1000 workers
0.1	4	0.66-0.7
0.6	20	0.28-3.3
1.0	40	0.8-0.8
3.0	120	3.0-10.6

OCCUPATIONAL EXPOSURE OF THE SUBMARINER

Duration of exposure

The submariner had served on eight submarines over a 150 month period. 128 months of this were on nuclear submarines, 24 months on conventional boats (Table 2). It is not known precisely when personnel of this type was sent to sea. A reasonable assumption would be to estimate this approximately six years period was split in the nuclear submarine environment (five years on nuclear submarines and one year on conventional submarines). It was the estimated condition the exposure is because above the estimated is the initiation of illness is likely to occur. While the submarine is at sea, it is running in the surface, conducting fuel oil, the exposure is not significantly in excess of the normal background.

Table 2. Submarine service.

Submarine	Duration of service (months)
Conquest	21
Conqueror	24
Breakthrough	10
Oriskany	1
Exposure	11
Exposure	13
Exposure	38
Exposure	24
Total duration	153

NUCLEAR POWERED SUBMARINES

The atmosphere recordings for each nuclear powered submarine in which the submarine would enter existed from the IBM and SPECT systems. In compiling the data it was noted that atmosphere reports from certain submarines were too restricted during some of the periods in which he served. This is likely to reflect the

operational role of the submarine at the time, perhaps spending short periods of time at sea, or undergoing a refit. All 1538 samples that contain atmospheric samples should only be taken during a five period of three weeks or more samples in the same or more and the last week of the period. In many instances therefore, samples are not reported under the present conditions. To get round this problem, all detector readings taken on the normal submarines on which he served were collated and a median benzene level for each submarine was determined.

In general, all recordings are well within the MPCMO limits. There is very little information on HMS Development. Samples taken in 1960 showed the benzene level to be slightly over the MPCMO. In 1970 HMS Conqueror's five analysis (an oil-based motor) recorded high levels, but SPECT considered the results suspect. Later recordings showed very low levels of no detection. In January 1941 HMS Resolution transferred to HMSO in the Auxiliary Machine Space (AMSL) but was well within limits again by March 1942 indicating that some source of contamination had been excluded.

Conventional Submarines

Atmosphere reports from conventional submarines are not recorded routinely due to the fact that they surface regularly to recharge the batteries and venting the interior. As a consequence there are no data available for the period of time spent by the submariner in HMS Oriskany or Oriskany. In order to estimate benzene levels it was necessary to use information from the period trials performed by SPECT and the Defense Research Agency (Hilton Heath).

SPECT performed Oriskany trials recordings in HMS Oriskany in 1961 which gave high readings. These measurements were obtained by using retrospective samples in the same area and analysis by mass spectrometry in SPECT showed low levels.

Other investigations have been performed by the Defense Research Agency (Hilton Heath) because of suspected contamination because. On doing the type of gas chromatography analysis considered had to test the right method of diesel tank oiling to allow for the necessary pressure procedure. The tanks were vented and diesel appeared in a bucket. The diesel was then moved in the diesel oil tank which itself tested was the oil components of the submarine. Thus the potential for exposure is because in the diesel

potential for exposure to benzene in the diesel fuel would appear to be greater than on nuclear powered submarines, although the exposure time would be considerably shorter.

Studies were undertaken on HMS Chalcople (Olin and Olin 1987).¹⁴ Recordings were made during a number of dives, the longest being 28 hours. The benzene MPC50 was not breached. In 1990 HMS Oiler and Chalcople were studied.¹⁵ The benzene levels remained fairly constant at around 80-90 parts per million in Oiler (90-150ppm/m³) and 50-60 parts per million in Chalcople (90-150ppm/m³).

RISK ESTIMATE OF BENZENE INDUCED CANCER

To obtain an estimate of the risk of benzene induced CML in this submarine, it was necessary to determine the level of benzene exposure during the service in submarines and relate this to the conclusions of the industrial epidemiological surveys. The calculations have been undertaken using both the carbon levels and maximum levels of benzene recorded on each submarine. Thus the average risk and worst case risk estimate were determined.

Calculations

(The uppermost figure for benzene is $5 \text{ mg/m}^3 = 1 \text{ part per million}$.)

Using the data collected from the submarines on which the carbon was served:

- The PVE Amphib exposed on HMS Compressor in 1971 was ignored because it

was considered suspect at the time and is completely erroneous compared to all other recordings.

- The Dasher readings were ignored because of the different cross sensitivity and large error factor.
- The left 40 centrifuged readings. Where "no detected" was recorded the lower limit of detection (10ppm/m³) was substituted in the calculations.

Because there was no information for HMS Oiler or Olin on the highest benzene level (150ppm/m³) and median benzene level (100ppm/m³) recorded during the DBA (Miles Model) trials were used in the calculations.

The overall weighted benzene level in which the submariners were exposed is $C_{\text{eq}}/\text{hr/m}^3$ time.

Where t_i = time served on individual submarine.

k_i = median or maximum benzene level on individual submarine.

Using the median figures

Weighted benzene level = 100ppm^2

(approximately 0.2mg/m³)

As 5 mg/m^3 of benzene = 1ppm

Weighted benzene level = 0.04ppm

To extrapolate 5 on the submarine carbon-exposure pattern back to a normal 8 hour industrial exposure it is necessary to multiply by a factor of 4 (the submarine spends 16 hours/week at work, normal workers 40 hours).

Equivalent industrial exposure = 0.16ppm.

Substituting these figures in the Mathematics Model (Table 1).

Benzene level (ppm)	Duration of service in years	Exposure in (ppm years)	Range of additional cases per 1000 submariners
1.0	40	40	0.8-6.8
0.24	8	1.9	0.02-0.3

- The maximum range of additional leukaemia cases per 1000 men has occurred in 1.6ppm for 40 working years (40ppm years) = 0.3-6.8.

Thus the estimated risk to the submariner exposed to 0.24ppm over a 8 year working period (0.19ppm years) is approximately

0.02-0.3 additional cases per 1000 submariners

Using the maximum exposure figures

Weighted benzene level =

$150\text{ppm}^2/10 = 15\text{ppm}$

Equivalent industrial exposure = 1.6ppm

Therefore the estimated risk to the submariner exposed to 1.6ppm over a 8-year working period (12.8ppm years) is

0.09-1.8 additional cases per 1000 submariners

COMMENT

The above estimate of increased risk is not a precise statistic. Several assumptions have been made and the following observations should be noted.

- a. Used different techniques were used to obtain the data. The accuracy and accuracy of the different methods have varied over the years. The charcoal grab samples generally used for routine atmospheric sampling tend to act on the side of caution, at least high.
- b. Data were not available for some of the periods the subjects spent on the various submarines. The total available data for each submarine were therefore reduced to provide an atmospheric profile for each submarine. This may not accurately reflect the actual levels of benzene that the submarine was exposed to.
- c. The sample numbers were small.
- d. The increased risk to the submarine has been estimated by comparison with estimates of increased risk of developing all types of leukemia in the general civilian setting. This required extrapolation from the 40 hour/week occupational exposure pattern to the continuous submerged exposure pattern. The estimated increased risk, as the reduced exposure is still based on myeloid leukaemias and involved the use of mathematical modeling, etc.

CONCLUSIONS

Occupational exposure to benzene has been linked consistently with the development of all types of leukemia. Acute Myeloid Leukemia being the commonest result. CHL is a rare disease but is now considered to be linked consistently to exposures to high levels of benzene.

The previous prognosis of benzene states that there is no identifiable safe exposure level. Benzene follows an individual exposure of 1 ppm there is no statistical evidence of increased incidence of all types of leukemia, but the low incidence of increased incidence of leukemia-all types) is 0.2-0.4 cases per 1000 workers per 40 years/pers.

Taking the latest case (the maximum recorded exposure figure for each submarine) the estimated increased risk from the benzene exposed leukemia in the submarine is increased to be equal to 0.8-0.7 1 additional cases per 1000 submarine crew a 13 year period of service.

However taking the median figure of exposure over a 13 year period the increased risk of developing any type of leukemia is estimated to be 0.0003 additional cases per 1000

submarine crew a 13 year period of service.

Therefore the increased risk involved in developing the rare Chronic Myeloid Leukemia is considered to be extremely small.

ACKNOWLEDGEMENTS

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Research

Problem drinking in the Naval Service: A study of personnel identified as alcohol abusers

[illegible]

Abstract

A group of seven species suffered the steepest declines in abundance over the 100-year period. These species included the two marine mammals, the greater frigatebird, porpoise, humpback whale, herring, striped mullet, Atlantic croaker, longfin mako and black drum. The abundance of Atlantic croaker and black drum declined about 90% over the 100-year period. They were compared with a closed system of water level management.

[illegible]

1000

In an earlier article we suggested that alcohol abuse presents a particular set of problems to the Social Service.¹ Its effect on discipline of law-enforcement and health cannot be ignored. Issues at these concerns are common to society as a whole. Others are generated by the unique demands of service life. Few would argue against a continuing emphasis by the Service on the framework of its ethics as a means of providing a basis for the development of a range of agencies and groups, not involved in providing and dealing with substance drinking, to develop medical, military, maritime and aerospace.

The impact of groups and individuals in the accident problem: they themselves will inevitably be influenced by their own perceptions. There may develop in a number of ways. Categorically widespread stereotypes of accident behaviour and appearance may exist as influences. Elsewhere the social culture where driving is considered necessary by custom, a motor vehicle there exists out of sheer desire by those drivers who have gone beyond the peak. In addition, national media interest in serious driving practices can influence individual and group behaviour.

Among the difficulties facing these doctors was personnel with classical related problems in most of disciplines. While comments on "drinking problems" (i.e. some individuals), more valuable than others to developing and How can education and prevention work for the joint mind effectively? These and other questions suggest the need to look beyond the often overused acronym and develop a clearer definition of problems drinking in the Naval Service (NS, RM, WILKS and CHAPMAN). Only in this way can an effective response be developed.

The following is a summary of research carried out by the Alcohol Treatment Unit (ATU) (London) in 1996, on computer phagocytosis of previously identified as alcohol abusers who attended the Bow, Alcohol Education Course (BAEC). The aim of the study was to provide a quantitative profile of this group in comparison with the Alcohol Services as a whole.

1997

The direction of the study had several strengths and weaknesses.

- 1) gathering information re potential treatment
- 2) planning a control group for comparison purposes
- 3) quantitative comparison of the groups and use of statistical significance

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Data on BAFC members over a 10-month period in 1992 and 1993 were gathered on a standard problem. The survey covered seven key age stress areas: marital status, alcohol consumption, parenting factors, family time in Naval Service, home moving and family history. The results were not linked in any way to identifiable individuals. Confirms and members of the other Armed Forces were excluded from the study.

The data collected on the alcohol referral group would be of limited usefulness without a means of comparison. A control group was gathered for six services, data age bracketed where serving, by obtaining figures from the MOD Statistical Branch. These were based on the manpower strength of the Naval Service broken down into the categories illustrated in percentages in Figures 1, 2, 3, 4 and 5. These were correct on 1 October 1992.

Control groups data for marital status, time in Naval Service and family history were either not available or susceptible from service sources. For these stress alcohol control group was used. Personnel attending the Royal Naval School of Leadership and Management HMS Gowerhead were approached to fill in a short questionnaire which contained a preamble explaining the purpose of the study. The questionnaire contained no personal information by which individuals could be identified. It asked respondents to categorise themselves for marital

status, time in Naval Service, and family history. In the preamble a number of previous response questions were included to identify those personnel with a history of alcohol problems in order to exclude them from the control group. A total of 100 responses was obtained. No one refused to complete the questionnaire. Three responses were discarded on the grounds of a previous history of alcohol problems, giving a control group of 97.

There can be no comparison group for data on marital status and parenting factors.

All the gathered data were converted into percentages and subjected to statistical analysis. Any significant differences, using the Comparison of Two Unpaired Proportions test, in addition the age distribution of referrals compared to Naval Service (Figure 4) was investigated using a Chi Square test.

RESULTS

The proportion of men ($n=159$) and women ($n=71$) in the alcohol referrals and control group is not significantly different (Figure 1).

The proportion of junior rates ($n=81$) among the alcohol referrals is significantly greater than in the Naval Service as a whole ($p<0.001$) (Figure 2) while in contrast, senior rates ($n=76$) and officers ($n=9$) are significantly underrepresented ($p<0.005$ and $p<0.001$) respectively.

PERCENTAGE OF MEN & FEMALE PERSONNEL DRINKING FREQUENTLY COMPARED WITH PROPORTION OF MALE & FEMALE ALCOHOL REFERRALS



Figure 1

COMPARISON OF PERSONNEL RATES OF DRINKING IN MOD, SERVICE VS. DRINKING SAME PROPORTION IN ALCOHOL REFERRALS (BY RANK GROUP)



Figure 2

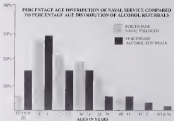


Figure 2

NUMBER OF SERVICE FOLDERS (JUNIOR COMMANDS, REVERSE), 1994



Figure 3

PERCENTAGE DISTRIBUTION OF AGE GROUPS, 1994, BY REVERSE COMMANDS (JUNIOR COMMANDS, REVERSE), 1994



Figure 4

FIGURE 6. PROBLEM DRINKING IN THE NAVAL SERVICE: PERCENTAGE OF MALES REPORTING PROBLEM DRINKING BY BRANCH AND GROUP



Figure 6

Personal and below twenty ($n=22$) are significantly over represented as a proportion of alcohol referrals ($n=131$) compared to their percentage of Naval strength ($p<0.05$) (Figure 7). No other results on this graph are statistically significant. There were no significant differences between the two groups (Control, Alcohol groups) with regard to length of service (Figure 4). What branch is considered (Figure 7).

FIGURE 7. PROBLEM DRINKING IN THE NAVAL SERVICE: PERCENTAGE OF MALES REPORTING PROBLEM DRINKING BY BRANCH AND GROUP



Figure 7

Communications personnel ($n=13$) are significantly over represented as a proportion of alcohol referrals compared to their percentage of Naval strength ($p<0.01$) and Engineering branch personnel ($n=39$) are significantly under represented ($p<0.05$). Mapping personnel ($n=31$) are significantly over represented as a proportion of alcohol referrals compared to their percentage of Naval strength ($p<0.04$) (Figure 8).

Those in the alcohol referrals group ($n=63$) are significantly less likely to be married than the control group ($n=31$) ($p<0.04$) and significantly more likely to be divorced ($n=11$) ($p<0.04$) (Figure 9) and to have a positive family history ($n=31$) than the control group ($n=11$) ($p<0.05$) (Figure 8).

Service protecting factors and referral sources for the Alcohol Referrals group are represented in Figures 8 and 10 respectively. As remarked earlier, these aspects cannot be compared to a control group.

DISCUSSION

The results have produced some surprising and potentially useful information. First, it may be supposed that as the Naval Service neither grades its men nor admits them to the list for referral for problem drinking, yet the proportions of men and women in the study group are similar to the populations from which they come.

FIGURE 8. PROBLEM DRINKING IN THE NAVAL SERVICE: PERCENTAGE OF MALES REPORTING PROBLEM DRINKING BY BRANCH AND GROUP



Figure 8

FIGURE 10: PERCENTAGE OF PROBATIONARY OFFICERS
SUFFERING FROM DRINKING

Figure 10

Over representation of junior rates and under representation of senior rates and officers is not altogether surprising, but the explanation is unclear. Are those who are prone to alcohol problems less likely to gain promotion because of the difficulties there between classes? Or are officers and senior rates, because of their position and privileges, better able to avoid detection and referral? Further work is needed to provide information to ensure that resources are being targeted in all areas where there is a problem. A possible explanation of junior rate over representation may lie in the age distribution of recruits (and hence) New officers and on senior rates are likely to appear in the under 20 category, thus reducing the junior rate figures.

The relatively high level of problem drinking referrals in those under 20 years of age is disturbing if it initially reflects the drinking behaviour of this group. Drinking studies of alcohol consumption by age group support the representative nature of the findings in those already from aged 16-24 years as the heaviest drinkers¹ but there may be other factors in work in the Naval Service. For example, it may be the nature of a responsible drinking in the age group already more conscious and raises more concern than does casual behaviour in older personnel thus prompting more referrals. No matter what the explanation it must be appreciated that while

FIGURE 11: PERCENTAGE OF PROBATIONARY OFFICERS
SUFFERING FROM DRINKING

Figure 11

some personnel subjected might modify their drinking themselves if given time, in perhaps suggested by the lack of significant correlation between length of service and problem drinking, others might not do so without help. Accordingly it is important that all those who are drinking to excess should be given both the opportunity and skilled assistance to consider their behaviour.

The finding of high recognition of referrals from some branches is interesting, but the implications are unclear. Further and more detailed research would be needed to secure meaningful relationships.

The prominence of alcohol related referrals among the probationary factors in absenteeism and referrals the Naval Service's longstanding observation of drink related absenteeism.¹² This might raise the concern that a preoccupation with this type of presentation leads to the ignoring of other manifestations of alcohol abuse.

The low rate of physical dependence indicated by the small proportion of subjects with withdrawal symptoms is a potentially reassuring observation. Even the low rate could have may be an exaggeration as medical staff unfamiliar with alcohol dependence will tend to see on the side of caution in diagnosing acute poisoning with drinking problems. A concentration on the early social consequences of problem drinking may prevent the later appearance of physical dependence.

The over representation of young personnel in all categories of involvement in the two members' surveys of those personnel in the shore service category will have been recently limited as a result of their alcohol related behaviour. The high proportion of young alcohol referrals coupled to young members at the Naval Service raises a number of points. What are your own views on any steps to help educational alcohol in does not seem to help them along it. The impression of the author is that the availability of alcohol onboard has little bearing on these effects. Rather it is the pattern of consumption adopted by this group of personnel where where this seems to be significant. In addition over representation of younger probably reflects a lowered tolerance for alcohol related culpability and self-blame perhaps by those in authority onboard equated with where they are and where they may be in short supply.

Devotional, religious and medical referrals (problems) is the principal route to the BAAC. This medical referrals probably include some religious/medical referrals where Devotional staff have referred the findings in the first instance. The low rate of self referral may appear worrying but this must be seen in the context of research on early problem drinkers: the majority of these were in the Naval Service, who are unlikely to self refer. Nevertheless, the need to encourage self referral must be emphasized.

It has long been recognized that married people at a group level less than their single peers. It follows that single personnel, in general, younger than their married colleagues, continuously living in and having few social or financial resources, must, will be exposed to greater risks of developing alcohol problems. On the other hand, the higher rate of divorce amongst the United Kingdom group indicates that marriage does not necessarily completely avert drink problems. It may be that the single and married alcohol referrals represent different types of problem drinking. Further work would be needed to establish whether this is the case.

The significant over representation of positive family history among alcohol referrals is hardly a surprising finding. It reflects the results of many studies which report a greater incidence of alcohol problems in those with a positive family history. Murray and his 1976 of the control group reported a family history of alcohol problems. A recent WHO report indicated that 1% of the population of the UK have a serious drink problem with another 1%

being described as heavy drinkers suffering some degree of damage. The Naval Service as a whole would therefore appear roughly representative of the population from which it is drawn. Clearly a family history of alcohol problems increases personal risk, but its presence or absence provides no certain guide as to who will or will not develop difficulties. It has been suggested that those with a positive family history display a more severe alcohol dependence than those who do not. No comment can be made on this on the data presented here.

In summary the study focuses attention on a number of specific characteristics of the personnel included. The most notable of these is the over representation of junior rates personnel and under 20. Considerable personnel and junior, the unmarried and divorced and those with a positive family history of alcohol abuse. This should, however, not be allowed to obscure the fact that alcohol referrals are coming from across the spectrum of the Naval Service if we look at our age distribution and length of service. It would not be safe practice to take over represented categories and assume that problem drinkers should be sought only amongst those who fall within them. Better to examine each case on its individual merits.

This does not mean that knowledge of why is over or under represented is not useful. The ambiguity as to the referral between off shore cases and junior rates may mean that the various possible reasons, some personnel are not being correctly identified as problem drinkers. Other questions could be asked about personnel aged under 20 or the predominance of disciplinary problems as a reason for referral. These sorts of findings are evidence of the need for further research to clarify the issues and suggest solutions.

CONCLUSIONS AND RECOMMENDATIONS

Cross characteristics of these may indicate that someone in the Naval Service is more likely than average to be labelled a problem drinker. It is not clear however whether this is an effect of the characteristic itself or the nature of the Naval Service's response to problem drinking. Further research is needed in days in day practice such possible cases of alcohol abuse must be judged on its own merits.

A number of points offer tentative pointers for attention in managing alcohol problems. A greater level of staff awareness and education

targeting in Part One and Part Two among anti-Medians may help reflect the numbers of under 30 year olds presenting with alcohol problems.

The relationship between disorder and alcohol problems emphasises the importance of co-operation between domestic welfare and medical agencies in managing the problem. The emphasis on referral following disciplinary enforcement and the low level of self referral supports an alternative route of access to specialist alcohol services is needed. To this end an informal alcohol support group has been established in the Portsmouth area as a joint venture between the ATF RNH Medix and Naval Personnel and Family Services. This is open to all commissioned and non-commissioned, a similar group runs at Plymouth. Finally, the need for further research into alcohol and its associated problems caused by over employment. Only in this way will solutions become clear.

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Marine hitch hikers — the transport of pathogens in ballast water

A. W. Munnson

INTRODUCTION

Historically, locusts, insects and weeds have been transported about the globe attached to the hulls of wooden ships. More recently, ballast water has been strongly implicated in the introduction of non indigenous and often harmful species to native marine ecosystems.

BALLAST WATER

Since the 1950s, vessels have filled ballast

holds or dedicated ballast tanks with sea or fresh water to maintain stability after the discharge of cargo in the expectation of full. The subsequent release of ballast water may be via cargoports, can occur or into distant coastal ecosystems. The potential for ballast water to spread pathogens around the globe has been heightened by increasing vessel capacity and faster transit times. This has meant that reproductive viable organisms in sufficient quantities may survive the journey to establish colonies. Carlson and Geller revealed 167 species in the ballast water of ships sailing between Japan and the USA. They listed species which are suspected of being introduced

At the time of writing, Sergeant Lieutenant Commander Munnson was participating on the Service Fellowship scheme at the University of Cambridge.

survived and colonized after ballast transport.

The majority of interlopers into the ecosystem of non-indigenous species to native Moorea have been introduced in Australia which now has an estimated 80 million acres of ballast water annually.¹⁰ Because of its relative isolation, Australia has been able to confidently attribute new arrivals to its massive seaborne trade with Asia.

Voluntary guidelines in many parts of the world have urged that the discharge of ballast water takes place at sea where the risk that organisms will survive is substantially reduced. However, there is concern that compliance may adversely affect the safety of high-traffic vessels with large ballast volumes.

PATHOGENS IN BALLAST WATER

Toxic algae

Many dinoflagellates are cosmopolitan eukaryotic microalgae. Significant quantities may be taken in ballast water during the long scale seasonal distribution problems which result in blue or red tides. Although not a new feature, blooms appear to have become more prevalent in European and American waters in recent years. Again, first, the importation of non-indigenous species and the effects of improved reporting, possible factors in the apparent increase in the prevalence of blooms include raised sea temperatures and phytoplankton concentrations of coastal waters, following run off from agricultural land and sewage inputs.

Under less adverse conditions afforded by ballast water dinoflagellates may survive in a healthy cystic phase until seeded in more favorable locations where they will decay and replicate. The reintroduction of ballast from cysts where dinoflagellate cysts may have been distributed by dredging or from shallow waters, risks contamination with algal species. Monitoring of the contents of ballast water and systems have revealed considerable quantities of toxic, or potentially toxic, dinoflagellate species.¹¹⁻¹⁴ These species have been shown to be easily capable of survival for long periods in adverse environments and of subsequent replication under favorable conditions.¹⁵

Algal blooms have important aesthetic and economic implications for coastal and fishing industries. More dramatically, certain species could incite mass mortalities in domestic, usually common or an introduced, which may cause

partial shellfish poisoning. Dinoflagellates are a highly diverse group which is characterized by brevity and subsequently consumed by man. The clinical effects, which resemble the pathophysiologically similar conditions, squalor and paralytic shellfish poisoning, usually become apparent within 30 minutes of ingestion and may progress to a second paralytic and respiratory insufficiency.¹⁶ Death may, rarely, occur on eating a single brogue; and the overall mortality rate has been estimated at 8.3%.¹⁷ A self-limiting diarrhetic illness has been described following the consumption of shellfish which first, grown on algae containing dinoflagellate toxin. This illness with the Indian *Pyrosoma aeroline* (yogh) has been suspected of causing dermatitis ('Digger Bush rub') in fishermen.¹⁸

Prokaryotic cyanobacteria (blue-green algae) may have entered Moorea on fresh and brackish water and in this case may be taken in ballast water in large quantities and released in unaffected locations. The acute signs may, like the dinoflagellates, have originated from cyanobacteria and a type of water treatment, chlorination and conventional use of water supplies contaminated with cyanobacteria and their toxins have been implicated in hepatic and urinary, digestive, dermatitis and allergic disorders.¹⁹ Cyanobacteria in keeping with their characteristic characteristics, poison as indolent hepatocarcinoma agents and they may account for some of the chronic phenomena that may be caused by contact with planktonic forms or benthic masses.

Cholera

Cholera, particularly the El Tor biotype which has caused the twentieth century epidemics, is able to survive for long periods in unfavorable conditions. This may in part be due to the production of vibrios by their attachment to algae.²⁰⁻²² Indeed, cholera epidemics have been linked to unusual plankton blooms.²³ Given a suitable food-chain, many post-infectious cooking, infrequently involving shellfish and an unregulated public water supply, ballast water introduction, may become established in unpopulated populations. The suspicion that cholera may have been introduced into South America by means of ballast water which was taken on at Area and discharged as sewage in the Pacific coast of South America²⁴ has been strengthened by genetic evidence linking multiple early points on the South American Pacific seaboard with Bangladesh.²⁵

Worktops, used for directly exposed to balling during load, maintenance and cleaning operations. Contact with balling medium is prevented as a potential hazard although the material remains in contact with all health hazards such as disease. The rate of contraction

Reduced waste treatment by means of chemical additives (harding, oxygen deprivation, water flow, ballast etc.) cannot and should not replace developments in water conservation. None of these can be recommended currently and such is likely to be banned by law, ship safety and national environmental standards.

The assistance of Dr F.J. Ranges of the University of Cambridge and of Dr B. Law of the Ministry of Agriculture, Fisheries and Food is gratefully acknowledged.

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Introducing the Agencies

The Defence Secondary Care Agency — A new structure for the delivery of high-quality patient care

R G Smith

INTRODUCTION

The Defence Secondary Care Agency (DSCA) is responsible for the provision of all secondary (hospital-based) care for members of the UK Armed Forces and is a unique civilian business for their dependants. The Agency will not be responsible for the provision of Secondary Care in Germany, which is provided by means of a separate contract awarded via a market test. However, the Agency will provide about 150 Service personnel, including 10 consultants, to support the delivery of health care in Germany.

WHAT IS A DEFENCE AGENCY?

Agencies created from the recommendations in a 1984 report of the Government's Efficiency Unit entitled 'Improving Management in Government: The Next Steps', which stated that 'to the greatest extent possible the executive functions of Government, as distinct from policy advice, should be merged and be more closely integrated within Departments, referred to as Agencies'. The Government accepted this recommendation and the Next Steps Agency programme was begun. Essentially, any function which comprised a discrete activity, or set of activities, was a possible candidate for Agency status. The MOD, and the Armed Forces, were no exception from these developments. Agencies have a part of the machinery of government, and are integrated into their parent departments. However, Agency Chief Executive Tony J. Parkinson is responsible for their Agency's performance and is the core of DSCA's report to Ministers via his paper who is normally a senior officer in civil service. In the case of the Defence Secondary Care Agency (DSCA) the Agency's owner is the Hospital General.

Accordingly, when Defence Costs Study 25 recommended that secondary care should be provided on a in limited basis, the option of creating an agency to run the programme was considered and agreed. This result is the DSCA.

WHAT COMPRISES THE DSCA?

The DSCA comprises all remaining military hospital services previously provided on a single limited basis. The Royal Naval Hospital Haslar has been designated the Agency's core hospital and will in all future and previous history, the Hospital's primary use of the Agency. To mark the Hospital's change of role, it acquired on 1 April a new name, (The Royal Hospital Haslar) and a new commanding officer (an Army Brigadier Brigadier Guy Ruckliffe CBE) to indicate the make up of the Hospital's personnel establishment has undergone a marked change from a previously 40% civilian of complement. From 1 April this year the Hospital will run a majority of its staff provided by the Army and the RAF. Whilst for some time to come, 80% personnel will comprise the largest single staff element for number, this priority will decline as the relative size of the contracted Services is reduced in the Hospital's staffing structure.

When fully expanded, Haslar will have between three and four hundred beds, as well as expanded facilities including rehabilitated wards, a five day clinic unit, a laboratory and expanded ITU and a trauma and plastics unit. In short, Haslar is becoming an its own unit and the addition of long needed new facilities will reinforce the Hospital's position as the 'flagship' of the DSCA's primary aims. In addition to the Royal Hospital, one other purely military acute general hospital is maintained in the UK, the Eastern of Kent's Hospital in Canterbury. This Hospital is a small one (with over 70 acute beds) but provides a useful backup in support of the

R G Smith MA, MBA, MRSA, MRSA, MChD, Director of the Secondary Care Agency

expanding Army presence in Gibraltar. The long-term arrangements for Secondary Care in Gibraltar, including the future of the Hospital, are under review, and a decision in this way ahead will be made over the next two years.

As well as the traditional hospital management role, the Agency will also be responsible for the operation of the new aspect of the Defence Medical Services: the MOD Health Hospital Unit (MDH4U). The concept is based on the Royal Navy's successful experiment of integrating RM secondary care services (operated as a result of the closure of RMH Southampton) with an NHS Trust (Plymouth Hospital Trust in Devonport). Three MDH4Us are now in operation as well as Devonport two new ones have been opened at Peterborough Hospital NHS Trust and at Freetown Naval Hospital, Sierra Leone. In the MDH4Us, Service personnel operate alongside their NHS colleagues in an integrated fashion, and NHS and Armed Forces staff together treat both NHS and Service patients. The experiment is proceeding well but sides are still learning about each other. However, there is evidence of considerable goodwill, encouraged by a shared commitment to make MDH4Us work for the benefit of all patients, both Service and civilian.

In addition to the UK based general hospital provision, the Agency is also responsible for two highly specialist units: the Defence Services Psychiatric Centre (DSPSC) in Catterick, and the Defence Medical Services Rehabilitation Unit (DMSRU) at Haslemere Coast. These units, in their various aspects, are responsible for psychiatric and rehabilitation services respectively. In the case of the DSPSC, the main focus there is funding an specialist reputation in the management and treatment of post traumatic stress disorder (PTSD). At Haslemere Coast the rehabilitation services are aimed at mine and the Agency is keen to build a close partnership with the managers of the other established in look after the facility. Both of these units are important to the future of the DMSA, the Agency will be continuing work of further developing these powerful units ultimately a better service can be delivered to our patients.

The DMSA is not limited to the UK. The Agency operates two overseas provider units. The Princess Mary's Hospital in Aldershot Cyprus and the Royal Naval Hospital in Gibraltar. In Cyprus, the DMSA has received an additional £1.2 million to run its supporting facilities whilst in Gibraltar, the Royal Naval Hospital is at long last to be closed in 1997 and

DMSA personnel will provide secondary care services from a new purpose built secondary care facility (SCPF) plans are well advanced for the construction of the SCPF.

THE DMSA'S AIMS

The DMSA, as we have found already is a busy and provides services to all agencies. Initially, the Agency Service Team set up in 1995 to examine the feasibility of the Agency had to submit a so called 'green options paper' to Central Departments (namely the Office of Public Service and HM Treasury). The paper looked at various alternatives (including no working provision and continuation) for providing secondary care for the Armed Forces and concluded rightly, that it was essential that the Armed Forces were supported by a properly insured network of mainstream secondary care personnel in consequence, it was agreed that secondary care should be operated on non-arms under the aegis of a MOD Agency.

Agency planning, was commenced in earnest despite the production of three key documents: the Framework Document, the Corporate Plan and the Annual Business Plan. The Framework Document describes the Agency, its roles and responsibilities, firstly importantly the Document lists the delegated powers assigned by the Agency's Chief Executive. The Framework Document is therefore a charter for the Agency and is reviewed only every five years.

The Corporate Plan also has a five year life. However, the Plan is a forward look at the key areas in which the Agency needs to make progress in order to deliver its aims and objectives.

Although the Plan is relatively broad based in its approach and content, it nonetheless gives a clear picture of the Agency's priorities over the next five years. In the case of the DMSA, its Plan sets out strategies and action plans in terms of working as the first of making available to Commanders at Chief appropriate medical trained secondary care Service personnel who required for training, assistance and supply units, and key business objectives. There are four objectives:

- To ensure steady and appropriate professional development and training to Service personnel within the Agency is made, there to develop the necessary skills for their operational roles;
- To deliver timely and effective treatment, consistent with expected outcomes, by providing the best possible medical care to all patients and which the operational

requirements of the Commandant as Chief medical. But treatment of Service patients is more than to delay as quickly as possible.

- To develop a culture and provide an Service environment capable of meeting operational requirements while continuing to deliver its effective and high quality secondary care service to patients.
- To manage all of the Agency's resources efficiently.

These objectives are underpinned by six strategies dealing with meeting the way, medical training, patient care, personnel, information management and technology and efficiency. Each strategy spans a five-year period of the Agency's development in these areas.

The real working document of the Agency is its Business Plan. The Plan looks one year ahead and comprises, in essence, a number of key targets which are to be delivered in the coming year. The DSCA's targets are agreed by the Supreme General. For 1996/97, the DSCA's targets are:

- To meet 100% of the Services' requirements for secondary care and meet in support of operations.
- To maintain the most appropriate clinical environment for all staff to ensure professional recognition and accreditation by statutory bodies in the light of their working standards.
- To meet all the milestones of Phase 1 of Project HCE in order to improve clinical excellence.
- To ensure the Agency spends Investors in People criteria within year one and produces an action plan for full compliance.
- To develop savings plans for Purchased Capex and Opex for each specialty and at each site.
- To meet a 1000 efficiency target of 4% for the financial year 1997/98.

These targets are challenging and it is anticipated a considerable body of work for the new Agency to enable us to first year.

CLOSER WORKING WITH THE NHS

Our significant feature of the new Agency is the closer working with the NHS. The RN had the way with the MDRB in Devonport however the Defence Medical Services have always worked with the NHS since the NHS was founded. Many of our staff were trained at the NHS and many of our higher professional officers continue to receive training at NHS centers of excellence. On the other hand DSCA is clearly managed the

DMS is greater collaboration with the NHS at a practical operational level than had been the case before the creation of the MDRB concept in a strict sense. The NHS has evolved the clinical market has placed pressure on both providers and purchasers to improve the cost effectiveness of the care they provide and many of the lessons learned in that context can be applied to the DSCA's operation of its permanent hospital functions. Of course the military and naval aspects of the Agency's work ensure the exclusive preserve of our combined staff.

INTRODUCING THE TEAM

The DSCA's management team comprises a Chief Executive, six two-star staff officers created by open competition and five one-star board-level officers, each responsible for a functional area of the Agency's work.

Chief Executive: Ron Smith, a former RAF Regiment officer who left the RAF for a career in NHS management and was latterly chief advisor of Leicestershire Health Authority.

Director of Personnel and Plans: Air Commodore the McCloskey, an RAF Medical Branch officer who is a consultant in occupational medicine.

Medical Director: Brigadier Peter Lynch, CBE, MC, who is a consultant physician.

Director of Nursing: Air Commodore Val Hunt, an RAF nurse who is also Director of Defence Nursing Services.

Director of Finance and Management Information: Paul Jones, who is a career Civil Service with the MOD.

Director of Corporate Development: Maggie Smith, a former NHS manager who was latterly with British Gas and Partners, is immediately here.

THE FUTURE

Despite the mediocrity of DCS is the future of the DSCA, looks good. Agency status will allow us time to work towards our new role whilst concentrating on the delivery of high quality services. By allowing the creation of an Agency, the MOD has given the closest possible signal of the government's intention to the development and maintenance of a high quality secondary care service for the Armed Forces. Our people are high quality, and the Agency is making considerable investment in new facilities and equipment. I am confident that the Agency will make a real impact and deliver cost effective services to its patients and customers.

The Defence Dental Agency

E J Grant

The Defence Dental Agency (DDA) was launched on 1 March 1986 following an announcement in the House of Commons by the Minister (United Forces).

The Agency has been created by bringing together the Dental Branches of the three Services into a fully integrated Service organisation following the recommendations of Defence Care Study II. The aim of the DDA is to contribute to the operational effectiveness of the Armed Forces by enhancing and maintaining their dental fitness in war, operational situations other than war, and peace. It will offer an improved level of dental services, coupled with flexibility and cost effectiveness, across the three Services.

The Chief Executive of the DDA, and his immediate subordinates, are Air Vice-Marshal Jeffrey Mackay, the incumbent Director of Defence Dental Services. In the DDA Headquarters at Luton House, he is supported by three functional Directors. These are Sergeant-Commodore (D) P J Grant OBE, the Director of Training & Personnel and Director of Naval Dental Services; Sergeant C Roberts OBE, Director of Plans and Resources; and Sergeant Army Dental Services and Air Commodore F G Millington OBE, Director of Clinical Services and Director Royal Air Force Dental Services.

The DDA, which is the largest employer of dental personnel in the United Kingdom, currently employs 854 uniformed and 174 civilian staff. It will operate in 200 shore locations worldwide as well as on ships at sea providing primary dental care for 250 000 Service personnel and 50 000 civilian civilians. As well as a large number of dental units in the UK, and Westland Island, the Agency runs dental facilities in Germany, BRAPB, Bahrain,

Canada, Cyprus, Gibraltar, Hong Kong, the Falkland Islands, Southern and Northern.

Professional Training for all DDA personnel will be focused upon two DDA Training Establishments at Aldershot and at RAF Halton. The activities of Comprehensive Dental Training at HMS Valence will be integrated into the two training sites. The delivery of dental care will largely be as a general, through single Service clinics at major Service sites. The management of care will however be conducted on a geographical regional basis, which may cross single Service and current Command lines. Departments of such regions together with clinical and management units will be headed out by a Principal Dental Officer (PDO) and his staff. PDOs will normally be established as Captains or equivalent rank.

The move to Agency status has presented a major and at times daunting challenge. It will however not only ensure the effectiveness and improvement of the efficient delivery of Primary Dental Care to the men and women of the Armed Forces, it will also open wider horizons and opportunities to those whose careers will be almost entirely within the DDA.

For the majority of those, they will be not only be recruited to the single Service of their choice but they will continue to serve. The rest of those joining within the Service. Those who start a year or two in the primary care sector, wish to undertake the higher training pathway to Consultant or Oral and Maxillofacial Surgeon will transfer to the Secondary Care Agency at an appropriate point in their training. These officers and staff/civilians who wish to go to higher management and staff levels will have wider opportunities for advancement.

The Defence Dental Agency is an entity in its survival and success will depend upon the determination of those who work within it to seize the opportunities now presented and the willingness of its customers, the operational commanders, to accept the changes in management which are necessary if the aims of the Agency are to be met.

Sergeant-Commodore (D) Grant OBE is Director of Training and Personnel, Defence Dental Agency.

The Medical Supplies Agency

A Harrington

BACKGROUND

The Medical Supplies Agency was launched on 1 March 1990 and is one of the four planned agencies to be created by the Strategic General Theatres and Primary and Agency Review of the Ministry of Defence: a medical supply organisation was a direct result of the Government's New Arms initiative and the recommendations of Defence Cost Study (DCS) 15. The review was conducted under the guidance of Defence Medical Operations and Capabilities by the Defence and Higher (Defence Official Management Association), Jane Wilson. They were created for a part of the time by another Strategic Office.

Early evidence from the Strategic Analysis identified that there was an immediate requirement to review elements of the current organisation within the MoD and therefore undertake a pre-emptive and comprehensive review and rationalise options. This formed the basis of the Price Options paper. Before this paper was submitted to the Minister for the Armed Forces the Agency Review Team was asked to consider the role of the Army-based Supply Depot with the possibility of incorporating this into the Agency and also to investigate whether or not any existing Agency was better placed to take on the medical supply role. The Strategic Matter General's staff were of the opinion that medical supply should pass to them. The other single Service Logistics organisations were also approached but decided not to become involved in addition, the option to absorb medical supply into the Secondary Care Agency was also considered.

Prior to the launch of the Agency, the medical supply function was fragmented across several TLE sites and organised as a single Service Unit. DCS 15 considered that this inhibited a coherent approach to the overall business of medical supply and recommended that the total costs TLE activity should be integrated across its Service units. Formally the new for central single medical supply agency was accepted as

being the preferred option. This would allow for the diverse medical supply activity to form into a seamless, cost-effective and flexible supply service capable of meeting all of the demands placed upon it with a strong emphasis on operational support as its first priority.

ORGANISATION

The initial key research achieving a fully integrated structure was to bring the various elements of the Agency, which were under single Service control, under the management of the Civil Executive.

Mr Brian Natchik was appointed as the MSA's first Chief Executive in January 1990 following a open competition. Immediately prior to joining the MoD, Mr Natchik was the Director of Information and Corporate Affairs at the Royal United Hospital M&H Trust in Bath. He had previously served in the Army for 22 years, where he posted considerable logistic experience.

The Agency encompasses the current functions of the Army Medical Supply Depot (AMSD) in addition, the Defence Medical Equipment Depot (DMEED) at Luton and 18 Medical Procurement Points (MPPs) located throughout the UK and overseas. The location of the headquarters of the Agency will be at Luton/Hatfield. A consolidation of Medical Procurement Points, now described as Medical Distribution Centres (MDCs), has already taken place which reduced the number from 18 to 16. Further rationalisation will be dependent on the outcome of the Investment Appraisal which will be conducted to rationalise the more cost effective options for future Agency locations.

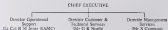
The organisational structure of the Agency has been developed so as to be sufficiently flexible to enable adaptation in order to meet two-fold main plans in their development. The Agency's staff comprises 65 military personnel direct from all three Services and 160 civilian personnel. The professional medical staff runs within the staff includes a Consultant Rheumatologist, Nurses, Pharmacists and Pharmacy Laboratory, Medical Supply and Clinical Medical Technicians. In war and Operations Other Than War (OATW), the

At the time of writing, Lieutenant Commander Harrington MSc(M) BSc was Procurement Officer at the Medical Supplies Agency Headquarters at Luton/Hatfield.

ingenuity of the individual personnel deployed forward to direct support of Field Hospitals and Field Ambulances to bring together with the

Technical Staff when required, the operational medical elements of Field Medical Support Depots (22 FMED and 301 FMED(Y)).

M&A MANAGEMENT STRUCTURE



BUSINESS OBJECTIVES

The aim of the Agency is to ensure the cost effective and timely provision of medical stores and veterinary material, blood and blood products, industrial and logistic support and trained personnel to the UK Armed Forces worldwide in War, CDPW and Peace. The fundamental business objective is to be the preferred supplier of medical material and associated services to the Ministry of Defence and other Government Departments. The Agency's full corporate and business strategies are laid out in the Framework Document and Corporate Plan copies of which are available from HQ M&A. In summary the Agency's primary output are:

Provision of trained personnel to support commitments deployed by Permanent Joint Headquarters (PJHQ) and single Service Commands.

Provision of peace and war-related stocks of multi-graded medical material and other medical material that may be authorized. Provision of advice and information on support of policy formulation.

provide life saving products and technical support.

Mt Graham North formerly Deputy Director Medical Supply has been appointed Director of Customer and Technical Services and is responsible for providing the agreed levels of service to customers who are represented by the Surgeon General in Service and single Service Operational Commands, the single Service Medical Headquarters, the Secretary of State Agency, the Defence Dental Agency and the British Alliance in Germany.

The commitment is worldwide: the Agency is represented in the UK, Germany, Hong Kong, Gibraltar, Britain, Cyprus, the Falkland Islands and Bermuda. In addition to the core role of supporting HM Forces the M&A will also provide support to other Government Departments, the United Nations and the World Health Organisation.

The Agency review process identified that the level of customer satisfaction of the current medical supply system was raised but in general it was felt the standards fell short of a modern medical logistic enterprise. To achieve its mission to become the preferred supplier of medical material and associated services to the MOD and other Government Departments, the Agency has to be customer focused and committed to providing ongoing consultation, rather than reactions, at all times.

The objective is to deliver an agreed range of goods of an agreed quality and effectively and in line with the current documentation. A Customer Services department has been established to provide the focal point for customers, ensuring demands are collected and providing information on progress of demands within the supply chain. An early lead has been established as effective Customer Service Help Line to provide more readily

CUSTOMER SATISFACTION

The M&A will be responsible for the provision of medical material to nearly 1,000 individual locations worldwide. Currently 1.5 million items per annum are made from an inventory of 50,000 items. This range includes items as diverse as a single needle for cancer dress to complex equipment such as life-support breathing apparatus (A&B) systems. The M&A has recently been ranked well being the Equipment Manager for all NBC Medical Requirements. In addition to meeting the agreed delivery limit the Agency will respond to unforeseen emergency situations by maintaining around the clock capability to

acceptable standards on supply matters and technical advice concerning products.

OPERATIONAL COMMITMENT

The MSA exists to support the Operational capability of the Armed Forces and has a unique ability to deploy a highly professional and technically competent medical supply organization forward into the theatre of operations. This flow stems from the deployment of a complete Field Medical Equipment Depot (FMED) with a range of professional medical staff, which includes its integral blood collection, processing and transfusion system down to the deployment of individual units within. Since the 1st FMED was first deployed during Operation GRANBY, numerous have been used in support of UN peacekeeping missions and its constituent parts of the Agency have been involved in many operations in support of the national interest.

The MSA provides the knowledge necessary for the 1st FMED and the infrastructure to ensure that, whether or not the personnel are wholly employed within the agency's boundaries, they are available from a fully trained deployable military unit within an agreed timeframe. Training associated with the handling of blood and blood products in the field ensures the responsibility of the MSA.

Similar tasks such as the protection support given to the ships of the Royal Navy and Royal Fleet Auxiliary are largely routine and can be planned for weeks or even months in advance and in foreign circumstances may require an immediate response. Following the declining risk from the Maritime Armed Units the operational scenarios are being rewritten and the training requirements for the FMED is being revised.

The MSA recognizes the importance of being a fully 24-hour service organization and its role in supporting 1st, 2nd and 3rd operational commitments. Action is being taken to ensure that both the RN and RAF are represented in the correct level within the Operations Division.

On Transition To War (TTW) the MSA will be required to ensure the appropriately trained military manpower resources with the FMED. Prior to these troops being deployed forward the necessary war plans will be prepared and submitted for deployment into theatre. The integrity of the medical material is supported by the National Contingency Plan which is currently held in the central warehouse at Luton/Gatwick either in the form of numbered stocks or packed into numbered lots

and either ready for deployment. Once unloaded the troops are then moved forward into theatre. A panel on Inventory Control and Control will remain at MSA HQ in link with FMED as required. All of these activities will take place within the timescale established by JFHQ plans.

Once in theatre the FMED will provide medical resupply forward and receive supplies from the UK Homebase. On completion of operations the stores, if technically possible and then the troops will be returned to the UK where the equipment and stores will be refurbished and prepared for reuse within a time frame agreed by JFHQ.

To establish the correct focus for the commitment of the resources a Directorate of Operational Support has been established and is headed by Lieutenant Colonel Dick Jones RA(RC) the former Commanding Officer of the Army Blood Supply Depot. The directorate will be staffed with a nucleus of Army personnel of the regular FMED created by RN and RAF personnel together with the appropriate mix of industrial and non-industrial grades. The mix of civilian and military staff will be such that continuity, particularly when the service personnel are absent on military training exercises or operations will be maintained.

MANAGEMENT INFORMATION SYSTEMS

The introduction of management information systems and other possible electronic links will further the demand process, increasing speed and more consistent results. Planned releases include links with inventory techniques and the introduction of simplified catalogues which will represent detailed parts of the inventory relevant to the needs of individual customer groups. The MSA will remain committed to providing cost of hours, crew and duty personnel will always be available to provide balanced maintenance to the appropriate level.

On launch there was emphasis on reliability of medical material throughout the medical supply system. This is an area which requires significant improvement as reflection of what is one of the main areas of potential savings highlighted in the efficiency programme. This problem is being addressed until the introduction of a Medical Material Management Information System (MMMIS) which is under development for the Agency. MMMIS provides total visibility of stock throughout the Agency to the point where it is received to a customer. The system will include Electronic Data Interchange (EDI) facilities for

the transfer of information between the headquarters of the Agency, the distribution centres and terminal depots. Current information systems are not able to provide all the necessary data to meet the Agency objectives of providing fully loaded ships and the maintenance of an performance system published Key Targets and control management targets. Several of the MSA requirements of the Agency have been met by the introduction of the MCM IS, but further systems will be required to ensure the needs of the Agency are fully met.

EFFICIENCY MATTERS

The Agency is committed to a thorough and far reaching efficiency programme to achieve the proposed 67% savings over the course of 1992 period 1989-2000. The major strands of the programme include cost cutting of non core activity, such as warehousing and distribution and the introduction of modern supply chain management techniques which is aimed at the Efficiency Programme. Overall value for money for Defence will be considered and Principal Accounting Officers operated to ensure maximum use is made of existing and planned facilities.

The MSA will work with Chancery and the Owner to develop a tighter range management policy designed to ensure that wherever possible use more equipment rather than those available in stock and to generate savings through the efficient management of a smaller range of material. The contracts and procedures will be developed to enable rapid greater use of direct deliveries from trade. For the remainder of its operating work the MSA is seeking a robust M.A. initially with the Defence Transport and Movement Executive (DTME) or, where proved not to be the most timely or cost-effective option a Private Sector provider.

These initiatives are aimed at increasing load

space and reducing the resultant wastage of available packing (dull life). In parallel a review of stockholding levels will be undertaken to establish the minimum levels consistent with meeting operational and other customer demands. These measures are expected to lead to a smaller, clearly defined warehousing requirement. This will be the subject of a full Investment Appraisal designed to reconstruct the most cost effective option for the future. This Investment Appraisal will also consider the impact of following RPA and RPA in loading activity on to a single shared site.

All opportunities for saving other areas of the Public sector and the Private sector will be considered and a number of Private Finance Initiatives (PFI) are being investigated. The Agency will also develop partnering arrangements with customers beyond MOD, either as industry or other elements of the Public Sector such as the National Blood Authority. The Royal Agency and the National Health Service Supplies Authority (NHSSA) when constituted to do so. Chancery, with the MSA, are currently in a partnering agreement has been established allowing for the early integration of the not operational aspects of blood collection and supply into the NHS.

It is recognized that to achieve an industry obligation the MSA will have to employ a higher level of professional and technical skills than would normally be associated with a Private Sector standard supply organisation. To make the most efficient use of these essential skills they should be made available to a wider range of Government Departments with similar missions. These include the National Health Service Supplies Authority, The Royal Agency, the National Blood Transfusion Service and the Hospital Trusts, where the Secondary Care Agency already has partnering arrangements. The MSA is therefore looking forward to broadening its services.

Training

The Defence Medical Training Organisation

C G Callow

The Defence Medical Training Organisation (DMTO) formed on 1 April 1996 is a result of the amalgamation of medical training for the Armed Forces, comprising three Defence Core Study (DCS) to ensure it has uniform medical training previously carried out by the individual services at a number of sites and will be concentrating their resources primarily at two sites.

The Organisation consists of a small headquarters led by Major General Christopher Callow and two main establishments: the Royal Defence Medical College and the Defence Medical Services Training Centre. The commanders of these establishments are Surgeon Commander Ian Arlison, who is also Defence Programme Data and Regulation Monitoring Executive.

The role of the Organisation is to provide individual medical training as prescribed standards for the number of personnel needed to meet the operational requirements. This will be achieved by close collaboration with the single service Medical Services Commands and their staffs, the operational commands and the relevant civilian professional and technical support bodies.

The Royal Defence Medical College formed in London in 1988 was the one of the Royal Army Medical College but will amalgamate a planned move to the HMS Dolphin site as soon as appropriate accommodation is available and has been recently modified. The College will centrally issue medical officers' orders and conduct training. The Defence of Health Studies of the College encompassing theory and operating theatre/placement training will set up on the Dolphin site in the first half of 1996. The College will also be the home of the Defence Medical Library Service. The Defence Post

Graduate Team assumes the responsibilities of the three previous single service centres for postgraduate and specialist medical officer training.

The Defence Medical Training Centre (DMSTC) is on the site of the former Army Medical Services Training Camp at Weymouth near Aldershot. Elements of the Royal Naval Medical Staff School and the Royal Air Force Institute of Health and Medical Training will move there during 1996 in phase with their programme of courses so that no essential centre provisions or procedures remain will be disrupted. The DMSTC will provide medical and technical training for officers and various non-commissioned ranks of the Armed Forces: it will train Health and First Aid instructors and non-medical staff who are not part of the medical branches. Single service career and promotion training will also be provided for staff of the medical branches.

In its first year training will be very much on the basis of that previously provided by the three single services. The main role for the transition to the new organisation and the success of the training establishments will be, therefore, by the implementation of initiatives that lay training necessary for individuals to advance in their careers will not take place. Where suitable and possible courses will be run on a 12 month basis with single service modules to meet specific operational requirements. Future courses will be developed in three phases with the single services to ensure that training is both relevant and appropriate. There will be a rigorous analysis of both training methods and content and the development of clear guidelines for ensuring the operational effectiveness of training. A Defence Council intervention is under preparation which will lay all planned courses.

The Organisation is being subjected to the Agency Review process at its first year with a target date of launch in its agency in April 1997.

Major General Callow OBE, CBE is Director General Medical Training.

**Major General C G CALLAGHAN CBE CBE FRCS
CMB VRS MBChB LRSMC
Director General Medical Training**

Born and educated in Kenya he qualified at Edinburgh University in 1964 having joined the army as a Medical Cadet in 1963. He is a consultant in Public Health Medicine and has spent most of his career in the Field Army. MOG appointments in operational headquarters. Lately he held appointments in HQ 47th and in Germany where he was deeply involved in the successful on house bid during the Balkan Test of Health Services for British Forces. He is married to Anne and has three adult children. His main interests are music, swimming, computing and he plays golf purely for his own recreation.



**Surgeon Commander J L JENKINS CBE
FRCS ROYAL NAVY**

Commissioned, Royal Defence Medical College and Dens of Defence Postgraduate Medicine. Having qualified in 1963 from the Welsh National School of Medicine he embarked on Surgical Training and entered the Royal Navy in 1965. After service at sea in 1968 A/N Royal as the Surgeon he started specialty training in Urology becoming a consultant in 1979. He then served on the Royal Naval Hospital (RNH) Gibraltar before returning to RNH Hauler as Consultant Urologist in 1982. In 1988 he was appointed Professor of Naval Surgery and in September 1990 became Medical Officer in Command of RNH Hauler. Between 1976 and 1979 he led the RN Hospital Support Team for Commando Forces. He has had a long career in surgical education and research and his personal interests include classical music, painting and game fishing. He is married with two children.



J. Roy. Soc. Med. Serv. 1985; 82: 55-56

**Brigadier M J RABCLIFFE DSOB MIMed
Commandant, Defence Medical Services
Training Centre**

Born and educated in Essex he joined the RMAF as an apprentice radiographer. He subsequently moved into radiography and served in military hospitals in UK, Germany and the Far East. Commenced work for the Royal Military Academy, Sandhurst in 1973 he has spent most of his career with the Field Army and as General Staff appointments. He commanded 19 Field Ambulance between 1982 and 1985 and was Commandant of the Royal Treatment in 1986. He has previously held in various appointments as MCSD (as Director Medical Supply) and Hong Kong (as Chief M4). Recently he was General Officer in Charge and then DACOM Medical HQ Land Command. He is married in Derby and they have two children son. His interests include cricket, gardening and travel.



The Royal Naval Reserve Medical Service at war!

B. Brackley

c.190000 Aug 95, the RNVR Medical Service went to war! The experienced sons of the Westminster district had been drafted to replace the commercial seamen on board the Gosport generalists but to maintain. Negotiations had broken down between Cornwall and Westminster and the UN. As a result of military sickness, Brigadier General Gwynne was deployed along the coast. The RNVRMS PCMS Team was ordered to RNVR Devonport on the Solent and prepared to enter military and civilian casualties from the medical conflict.

In terms of the medical organisation, a team of six medical professionals, eight land and sea was established and maintained in order to provide medical support to the battle. The team consisted of:

Three X-Winged Collecting Station Forward Services (Expendable Aid Post (EAP))

Field Service Station (FSS) incorporating Command 486, Treatment Reception, Treatment Day/Team, Evacuation

Medical Ambulance Service with additional support from LCL, RCL, Royal Redoubt, and two Lynx Helicopters.

Primary Casualty Recovery Ship (PCRS) incorporating Triage, Examination, High Dependency Theatre, Low Dependency, Patient Control Unit, Logistics.

For anyone who wishes to know more:

Thankfully, this was not for and has formed the experience of the RNVRMS against Commanders Training Period at Devonport Camp Gosport during September 1995. 230 Field Ambulance (FA) (Hull) provided 140000, 1 and 2 while the RNVRMS PCRS Team deployed in 140000. 3 the former in the field.

London's Westminster District is a Royal Naval Reserve Medical Services Officer and is currently employed by the NHS as a physiotherapist.

around the Clappert and Southwestern areas and the limits encompassing meetings within the boundaries of Fort Belvoir Camp. Over four days a casualty status was set up with tables placed in staggered positions from locations of Missions (Drawing Stations) by mail run to me. The end of the exercise was called at 21000 hrs after VIP visitors had completed their tour of the PCRS.

During the exercise and within the PCRS, 51 casualties were processed by 71 staff, 26 on Post and 25 on Inlandward. Within 14 hours, 21 ambulances (mostly with only one landing) kept two casualties were evacuated to the theatre. In addition to clinical treatment, Detuff also conducted the "Stop" is usually to test awareness of and reactions to various signboard evolutions of the South changes in its state, displaced papers, etc. The Patient Control Cell (PCC) staff were used strictly to process documentation but also to track disaster elements in, deadness, search, shift signals and casualty returns. During down time, as where there was a fall in casualty flow, there was evidence of much

training effort within both departments and across both readers. This added to the extensive training where time, as possible, as the operational time would be filled with various training scenarios (fatal and averted).

Final control was exercised by the Exercise Coordination working in concert with the Army being responsible for battlefield play and against Army time events but for a number of departments including International Health, Dental, Mortuary, Basic Traction, Command and the RCH for the casualty simulation and casualty response team events. In as well as support RCH teams to exercise the PCRS, specifically was clinical and administrative details.

The exercise has proved excellent training value for all concerned and has been a good example of joint service working and cooperation. Many lessons have been learned and the can only serve to enhance the knowledge and skills base of RCH Medical Services personnel as what will be their operating role, ensuring Surgical Support Teams.

Elective Report: MedSTAR, Washington DC, February 1995

Philip T. Marshall

INTRODUCTION

The vast majority of medical students upon their doctors as being the best part of their under graduate course. However, you never quite believe them until you get the chance yourself to select to experience my specialty of medicine as my part of the globe. I certainly had the most amazing time in my elective, working in a Level I Trauma Centre, in Washington DC.

Every elective is a very special unique time and this report reflects my personal experiences and notes on what I saw and came across. My time in Washington DC was great but the hardest work. It was followed by the wonderful people with whom I was working, the place I

worked in, and the patients. I cannot stress, I would recommend this elective to anyone with an interest in trauma medicine. A and B, standards in trauma care. It is a wonderful opportunity to experience the practice of medicine in a highly developed and technologically based environment. This is expected to participate fully and will find yourself very busy working long, hard hours (the fact, very good preparation for one's future Doctor years.)

WASHINGTON HOSPITAL CENTER

The Washington Hospital Center (WHC) is a non-profit member of MEDLANTIC healthcare group. The centre was opened in 1958 and was the standard for healthcare in the region. It is located in a 47 store complex shared with the Children's National Medical Center, the National

Philip T. Marshall, MSc, is a Trauma Surgeon Lecturer, Specialist in the Surgical Department at Bedford Hospital, Plymouth.



One of MedSTAR's 117 helicopters

Robertson Hospital and the Veterans Administration Medical Center. The hospital has nearly 1,000 beds, with over 70 intensive care beds. In 1983 the Center's 1,250 physicians attended 34,000 patients; there were 72,000 patient discharges and 79,000 visits to the emergency and trauma departments. WISC is a integrated leader in several critical areas including cardiac care, cancer prevention and treatment, ophthalmology, kidney and pancreas transplants, bone marrow, shock, trauma and hyperbaric oxygenation.

The hospital is also involved in training 230 medical and surgical residents each year, plays an important role in patient and community health education and participation, an extensive clinical studies through the Medicine Research Institute.

MedSTAR (Medical Shock Trauma Acute Resuscitation)

MedSTAR is a highly skilled medical team of flight nurses and paramedics, ready within minutes to provide specialized enroute care for patients transferred from accident scenes and hospital emergency departments, and intensive care units. MedSTAR also operates a helicopter unit, BK 117 helicopters (one is pictured above) 24 hours a day, seven days a week to transfer

critically ill or injured patients within a 200-mile radius of the Washington, DC metropolitan area. In 1984 over 123,000 medical miles were traveled by the helicopters. This unique program has been functioning for 12 years. Last year the dispatch center within the unit handled over 2,000 requests for helicopter assistance. The patients are then received and managed by the American College of Surgeons certified Level I Trauma Center at the WISC.

The unit is a essentially a flying ICU, fully equipped with the latest A&S equipment including the Life Pak 12 intensive-care/monitoring with external pacemaker capability. Monitoring capabilities include ECG, multiple waveform pressure lines, end tidal CO₂. The aircraft has its own on-board liquid oxygen supply and advanced portable supply in-circuit. Several IV pumps are carried as well as numerous medications. The flight nurses are all highly skilled. Training includes mental and emotional endurance, surgical aseptic/asepsiology, needle thorocostomy and emergency line insertion. All MedSTAR nurses and paramedics are ACLS certified. MedSTAR ALS® and ATLS® trained.

The Resuscitation Unit is one example of units from the hospital. Patients are brought into the unit and resuscitated in one of the six bays. They are then on Operating Room (OR) and when a



Surgons Lieut. Lieutenant Marshall (near right) and her BlackArk colleagues

in transportation to take patients to the hospital, main (all units). The dispatch center and operations desk are at close vicinity.

Three teams of doctors work on maximum for Unit 101 A (ARMY) team B (NAVY) team C (RMC) team work is done on call into. Each team consists of a Team leader (this year resident in surgery) and then at three team members (resident in each specialty in surgery). Emergency Room, family medicine — and of varying experience and visiting medical students from abroad and Washington medical schools including USUHS—(Advanced Science University of the Health Sciences).

I must add that everyone on the hospital work, 130-150. This includes all doctors on call, all nurses and other members of multi-organismal services (public health). It is therefore very important to wear your hospital ID badge on everyone's names who you see?

The team on call responds to Code yellow and Triage requests which are issued by voice over each member's pager. The dispatcher determines which type of response to call based on patient condition following a set criteria. Head and penetrating trauma, large black stains. Code yellow is more rare and these teams respond.

MY EXPERIENCE

As a student you are fully involved in the management of patients. It is up to you to be to visit or you can get involved as much as possible. There is little point in just sitting back and watching. You will have a far better time if you get to be involved as possible and are an understood member of the team. Your time will be more worthwhile and enjoyable. The case in three can already make more getting used to

but once you are in the routine it does get a lot easier (please?)

Residents — they are called taking place every day (some days 4 weeks). These usually occur at 0700 or 0730 but are in the afternoon of the three hours as you may get them later in the weekends, especially if there are few sick patients. The junior house officers usually have their own patients and check their rounds and let their management in progress. This is then reported back to the team leader who presented with the team to see of the patients. We needed to start with one patient up to the houseman Case times. Each patient was under the direct care of the houseman team and the critical care specialists.

Resident time — a very important part of every morning usually followed rounds. The hospital continues to be very good offering a very wide variety of advice, but mainly, family care, trauma, heart and lungs as well as liver, gynaecology, neurology and others.

In the call days it was that a question of writing in BlackArk (usually the on-call room for a lot).

At least two or three times a week there were interesting rounds. The on-call attending (sometimes) of the day (usually) go around all the various patients with all their house teams. During my time this was in the order of 30 people — quite a word round — though an event went in so not a patient, just discussed them outside their door?

For on call days, most attending rounds were over and there was not anything else to do with your patients. The team was free to go (usually 1400-1500). The pre-call team went on what is called back up for the day and held a somewhat depressed morning clinic. For trauma patients could come in for their wounds to be checked, stitches/sutures removed or follow up after they had been sent home.

Surgery was another important part of the schedule. Obviously emergency operations were carried out on-call as well as planned. However, patients may also need follow-up surgery or procedures carried out as well defined surgery. A few routine operations were also carried out as part of following after hours surgery from a patient round.

Conferences (clinical meetings) were held twice a week. The weekly M&M (morbidity and mortality) meeting was held at 0700 on Fridays and was often the most of lively discussion among the attendings and the house doctors who had to justify their work a score.

diagnostic personnel layout was needed: a nasogastric tube and urinary catheter both put in place first. Orthopaedic surgeons were called in on all fractures. Physiotherapists were called in everyone with spinal fractures or a head injury. If there was any history of any form of consciousness, however brief or minor, a CT head scan was carried out. Note-taking was essential: there were several charts for the history and physical examinations and integrity diagrams. The team leader also had to write out a history, examination and management report. Once satisfied, patients could go up to the floor (results of scans obtained to assist care or were taken to the OR).

During my first week at MASH/T&R I was on call four times and only once did we never actually not need help. A brief summary of the progress we saw that night is given in the box.

I found working at MASH/T&R a wonderful experience. I was a team team member and got involved as much as possible. I participated decisions and asked those management plans. The atmosphere is a whole lot of much lower threshold for quite unswerving procedures, which does take a lot of going 'what if' however they justify all their actions in their own way. I worked with one excellent team of people. We all

got on extremely well, which made things so much easier, as we were together a great deal over the four weeks.

I did not just get to do as many procedures as I had hoped — but we just did not get the numbers of patients which the unit got at other times of the year. On the summer up to 25 patients per day can be expected. I did, however, learn a great deal and it gave me a chance to question people a lot and I started to question medicine as a whole and whether technology has taken things too far. I sometimes thought that a great deal of equipment and other resources were used to keep alive patients with very dubious prognosis. And to keep such more prominent ones in the everyday management of patients. Every time you had a low value patient in it which meant the patient was charged for every item used in their care.

In addition to gaining clinical experience the medical students were encouraged by the surgeons to undertake a research project of some kind. I undertook a library project looking at the contribution of trauma centers in the US and now what is happening in the UK with regard to the management of trauma patients. This goes with trauma and considerable interest in my medical school.

Did you serve in the Falklands?

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History

Care of World War II convoy casualties in the Kola area of North Russia.

Part 2 — The Royal Naval Auxiliary Hospital, Vaenga

G H G McMillan

Abstract

The Royal Naval Auxiliary Hospital at Vaenga, North Russia, was operational from December 1942 to July 1943. Care and treatment were provided to 153 male and 104 female casualties from Allied convoys reaching stage and first degree and killed personnel who became sick or wounded while in the Kola area. The hospital was built on land of the main camp (headquarters of military forces) the location in period of the hospital's existence, staff requirements and work.

THE BATTLE OF WORDS TO LAND IN NORTH RUSSIA

Throughout the war we denied the fact and refused to let our medical personnel in 1942 there was a desperate need for greatly improved medical facilities in North Russian ports for British and Allied seamen from Arctic convoys and personnel surviving attacks. This was made painfully obvious when local facilities were overwhelmed by the huge number of casualties landed on July 1942 from the 21 merchant ships of Convoy PQ17 which had been sunk by the enemy. Our consequence appears to have been the dispatch to North Russia, without notice, of a Royal Navy medical unit comprising four medical officers, a dental officer, six nurses, two physiotherapists and seven other war health ratings. They sailed with their supplies and stores from the Clyde on 15 August 1942 on board the coastal L501 *Starchikov*. The ship was delayed at Kola while the absence of wages was, as considered by the Naval staff but ended after a day or so. One of the ratings recently recalled the ship passing through the delta of Convoy PQ17. Personnel left with life jackets, wooden boxes, cardboard or tin as they could use.

When they arrived at the Kola inlet on 23



Figure 1 Kola Inlet, North Russia

August the Senior Grade Naval Officer North Russia (SNOGR NR), based at Polyarny, a Russian administrative base on the west side of the Kola Inlet (Figure 1), ordered a doctor of the party to establish a hospital at Vaenga across the inlet and the others to continue to Archangel with a similar purpose. The Russian officer was, however, at the apparent attempt to persuade or deceive them into leaving prior to period the medical

Subject Categories: M. McMillan (the Director of Naval Medicine) and MRC, Institute of North Medicine.

staff in fact, revealed the urgency that provision of medical facilities was not a problem and demanded that such be used. In high level diplomatic, telephone exchanges involving Mr Churchill and Mr Eden, Senior Medical Officer (first permanent) Lt Colonel Macdonald of British medical services working among the Soviet medical personnel across British interests in Yaguaj and Arhangel. During this, senior medical local commanders that the Yaguaj and was to be represented as senior GP's. One medical officer, Surgeon Lieutenant G A Macdonald, RNVR, remained with small number of men while the others returned to the United Kingdom. The telephone held in the Public Records Office are reproduced in Chen Yue's book 'The Red Cold War'.

Exchanges between Churchill and Moscow continued while it has been suggested the Admiralty considered converting an Arctic convoy vessel ship to a small hospital ship to be based permanently in the Kola inlet. It was made clear to the Russians that their arrangements over the hospital was impending a commitment of money and of time, on 2 October the establishment of a Royal Naval Auxiliary Hospital under Lt Yaguaj was approved. Additional stores and staff were being sent by the cruiser dependent escorted by the destroyer's *Chilmore* and arrived on 15 October 1947 and reached Kola without enemy interference on 21 October.

Surgeon Lieutenant Commander J M McEwan was the first Royal Medical Officer. His first Medical Officer's journal for the hospital dates from 21 October. This coincided with the start of the Second Battle of El Alamein. Two weeks later the Western Allies landed in Cassidonia, Oran and Algiers in Operation Torch. Allied shipping was directed from Arctic convoys for a short period to meet the transport needs of desert operations so there was a breathing space in which the hospital could be set up with fully built out of having to receive more casualties. Moreover, the risk of air and surface attacks on Arctic convoy shipping was reduced for some time as Luftwaffe operations were now from north Norway to Sicily and U boats concentrated off Morocco and in the west of Gibraltar.

CHOICE OF SITE FOR HOSPITAL

The needs of British and Allied personnel could be met fully only by provision of hospital facilities close to the port major convoy ports. Murchison on the Kola inlet and Arhangel on

the White Sea. Priority was given to Kola because it maintained sea lines through the year while White Sea ports were up bound for several months. Last on the list the Russians granted permission for a hospital in Arhangel but through British staff and material were delivered in February. Until the European War was concluded before it could be established.

Material staff was available for the Kola hospital as it was bombed frequently and was relatively remote from the other Allied facilities scattered round the inlet. The process of establishment of personnel was in RENO - HQ in Polynesia but there was only limited sea access in this area. Yaguaj, which had a large ton of Polynesia across the inlet and 47 miles north of Murmansk, had the advantages of relatively few air raids, a deep offshore anchorage in the Bay and a port where sea destinations could be used to discharge and embark casualties. In some developments was the inlet a risk of being discovered by radar or sea from Murmansk or Polynesia.

Simultaneously with the establishment of the hospital medical facilities in Polynesia were improved by setting up a four bed sick bay run by the first Medical Officer and a LBA from Yaguaj, initially Surgeon Lieutenant Commander Fox and LBA, but his full weekly rounds the time at Polynesia especially when passing through the Bay on a night call with the LBA. His area was granted by a junior boat landing in a forward tug it was. Fortunately Fox and Hall gained superiority over RAO.

YAGUJA - ENVIRONMENT AND CLIMATE

The two villages which made up Yaguaj lay on a plain sloping the inlet with high bare hills across the water and inland. One was a collection of old wooden houses and the other more modern with brick buildings, some several stories high, comprising the Post Office, repair shops, gunnery station, command building, laundry and the block in which RNAR Yaguaj was established.

The country was made with extensive scrub and some vegetation. There were small trees near green grass - only bushes and moss. Overall, the landscape is rather more bleak and colourless but the water space was more attractive. The broadcaster Robert Hooper who in the early months of 1944 passed the hospital in the first Lieutenant RNVR, however has remarked that 'There was an unbelievable air of interest about the place - in short,

aggravated symptoms. Packs of wild dogs roamed the hills on either side of the river.

The villages were just south of the 66th Parallel (Figure 1), within the Arctic Circle and surrounded by land masses to the climate was one of extremes. At times the hospital staff worked in conditions which approached grave hardship. Autumn and some of grey days when most of the year's snow fell. It was usually too cold as water which was piped into the long lines of latrines from mid-November to mid-February. In midwinter the only daylight was a period of twilight of about two hours but the moon when it came was unusually bright, the full moon making it as light as day. A good deal of light was given by the Arctic Auroras often very brilliant and showing all the colours of the spectrum in turn.

Temperatures were rarely above 0°F and rapidly reached -15°F but there were occasions from year to year the winter of 1941/42 being so mild that there were frequent snowfalls from January through to mid-May while in the winter of 1944/45 when snow almost in the fall from June. The temperatures were down as far as -40°F. The rule was quite inflexible in the absence of wind and provided maximum could be taken, but conditions were most unpleasant in windy weather or while travelling by transport.

Three hand-wedged sleds for dogs with six dogs and three hand loader boxes were provided to every doctor's tent though sometimes when riding in transport were too bulky for comfortable movement and the boxes were too slippery on ice or packed snow. Vehicles (this being supplied by the Russians) were most satisfactory. When the sun permitted light clothing could be worn with comfort even though the temperature was low.

A slight rise in the temperature in winter produced a thick mist over the water but on the land often to several fathoms only. Thick fog, coming, weather warming and pressure conditions for days, was a serious hindrance to water transport.

Conditions indoors were sufficient owing to adequate heating and lighting and, for most of the time, heavy clothing was worn within the building. No ill effects resulted from the water cold and there were no cases of beriberi. There were a number of accidents during transport along and along and due to icy conditions and, too, the first Dental Officer was sent a casualty and had to be evacuated to UK.

Spring was short and brought the snow with rapid success of warm sunny days. The sun on the snow was painful to the eyes but coloured goggles were worn and on some of more blisters were reported. For many years was the most unpleasant time of year with perpetual daylight (for over a month the sun did not set) and constant rain but which made sleep difficult. Temperatures rose from 40°F in April to 60°F by the end of June. Diarrhoea was compounded by days of rain of slugs and black flies and mosquitoes with painful bites but fortunately not-carrying malaria. While the heat was always cold for bathing many found the cold water too much for bathing as being so refreshing.

ROLE OF THE HOSPITAL

The hospital provided medical facilities for Finnish personnel and those of the Allies other than Russians. As shown in Table 1, while many of the patients came from the Royal Navy and French Marines many other services and organisations were served. Royal Marine gunners, RAF reconnaissance parties in Germany, the Army in Manchuria, USAAF air crew, Allied Forces (including, Moroccan Forces) and three Norwegian companies.

A few patients were admitted in October 1941 but the hospital was not completely fit for use until November. A medical officer visited the hospital weekly to see patients from the French and American divisions and aircraft ships in the docks and one of the medical ratings stayed there on a tour. Periodically a medical officer would spend some weeks at Leningrad and the dental officer would go on tour visiting the Finnish divisions at Murmansk, Archangel and local stations.

CONSTRUCTION, LAYOUT AND FACILITIES

The hospital was established in part on the first second and third floors of a large, formerly brick block of flats in the downtown village on a corner site about half a mile from the pier (Figure 2). The total area for which most was paid was 404 square metres. The building also accommodated a Russian hospital on the ground floor and a Russian military barracks. The building was of crude construction of solid brick without wall cavity and that was poorly insulated. It deteriorated rapidly over the nine five years as damp rotted and everywhere. Rats in the main party road.



Figure 1. View from the North Gate of the Hospital during a heavy rain. All windows in wards 100 were closed by the time the photograph was taken.

The place was filthy: dirt had to be scraped off the everything scuffed clean. Everyone worked very hard to knock the place into shape, painting, decorating, carpentry, you name it, we did it. The change was unbelievable. All the time we had to keep a close packed because the German boys were only about 30 miles away.

CLINICAL ACCOMMODATION

All the clinical accommodation was on the second floor, the main entrance of the main entrance. The main supplementary entrance was the main floor which was not occupied and covered on day and night accommodation on the ground. The windows were double and were sealed with putty, a small window in each frame being left unsealed for ventilation. The wards were filthy (i.e. redecorated) and very with ample window space and were very pleasant in summer, when they looked like first class in winter they were barely cold.

Four wards were established usually to give a normal capacity of all beds with the facility for 100 beds if required. They were heated by hot water radiators through an expensive power the heating was quite adequate. The ward that was provided by these radiators and even double doors failed to prevent draughts and cold. A strong smell.

The windows were exposed to the elements and had to be covered to make the ward from the wind. This was very bad in winter. There was no light or ventilation more had to be maintained up the ward.

Ward 1 (24 beds) and Ward 2 (24 beds) were in one end of the floor and were used for the most severe and acute medical cases respectively. Medical history was by electricity with a series of lamps down the centre of which were hot air beds and light. Moving down the length of the building, beyond the ward was a hall a dressing area with a waiting room, consulting room, bath room and the hospital's only working WC — the only working lavatory on this floor.

planned to house up to 100 patients? Recently captured enemy soldiers told Dr. McMillan I found this day deliriously scared, incoherence but no feelings to patients, who had shared by patients who had to make the journey to another floor to see a hospital?

On the other side of the receiving area was Ward 1 (14 beds) used for acute surgical cases. Down from a second was the operating theatre (also connected to the receiving area) - the X-ray and dark room and two small side rooms for staff officers and company of things. Across a second open hallway was Ward 2 which extended across virtually the entire width of the building and could accommodate 40 beds. As a rule, the clothes and blankets of the wards and furniture from the laundry it was used for cases of minor injury or convalescent patients. All patients were grouped under the main central ward, where they could be best supervised by the hospital staff. By 1944 only Ward 1 and 2 and the side rooms were used routinely. The other wards being kept ready for the reception of more casualties with doctors' treatments (patients) and other building piled up. They also provided accommodation for prisoner women including the wives of Canadian Army boys.

Through an another hall from Ward 4 was the dental surgery room. The dental surgery - a medical store and a Russian type lavatory which could not be used because despite numerous requests for repairs, sewage dropped into the room from a broken pipe in the floor above - and eventually brought the ceiling down throughout the dental ward. The dispensary opened from Ward 4 and was well fitted out.

The operating theatre (used light from a large window on the outside wall and electric overhead light from two lamps on each of the three main walls and two suspended over the table). There was no auxiliary lighting, though candle lanterns were provided and portable lamps offered for use if the electricity failed as the Russians did not use general anaesthetics as open flame in the operating theatre, was not considered to them. A secondary lighting system using incandescents which could be changed locally was installed in the theatre only in 1943 by staff from Black Sea and another system was provided by local through-cable in the area near or so. The plaster floor was covered with rubber sheeting.

The X-ray room had a portable Victor 9 ray machine wired with difficulty using as fuel was an electric power (approximately 120

volt, most often 150 and rarely more than 180) and a step up transformer was fitted in early 1944. The room doubled as a laboratory for simple histology and had the dark room opening from it.

The dental surgery had special water and light fittings but like most of the rest of the building, there was no hot water supply. Dental facilities were greatly appreciated because as recalled by Mr P Andrews, who spent the winter of 1944-45 on the Heavy Lift Ship *Augusta* in Murmansk, as the director of the Royal Navy Dental.

We had only one dental dentist, large Indian who held surgeons behind screens at the end of the dining room of the Arctic Hotel with one building, the present is day while the third operated the plant.

On August 1944, a Temporary Surgeon Lieutenant R2018 with the Polytomized M20 Florida over the winter of 1944-45, visited the hospital at Murmansk during a short spell for the Dental Officer who offered to do a full dental check. He talks of spending two days at the dental chair, saying enough of the hospital and staff made the visit of the first appointed staff. Others had happy memories. Mr Morris Nelson, an Air ADC from the disabled 1944 Canadian (two years) was granted to Surgeon Lieutenant (20) Matthews, who made a trip out of Murmansk, which lasted 30 odd years.

Officers and accommodations were in individual rooms, on the first floor. Patients' accommodations were on the third floor. But back rooms for Russians (personnel occupying the rest of the third floor of the building above the dental ward). Mr Andrews from 28 February, Russia's recaptured 1944 taking him of Russians without leaving the upper floor and although the main entrance was about constant guard, that entrance could be passed by way of the ward - with the permission of a duly recorded day 1944.

I am sure that this tale was exaggerated in a few one-to-one listening through the main hearing pit?

A most relaxed attitude appears to have been taken in relations between foreign male and female soldiers in the Murmansk area, a patient in the hospital in February 1945 having been married from the hospital's convalescent R2020 Douglas Clark, recalls the scenes and sounds of the Russian Russian soldiers being carried on the floor down.

The hospital kitchen with its wood-bred stove and water boiler, food store and food preparation room, with their attendant service and cooking

wards were throughout the Officers' accommodation making the supply of hot food to the wards and the staff quarters very difficult.

Heating was inadequate. For long periods the central heating system could not be operated as there was no coal for the boiler houses in the basement — and a coal fire was needed. Even when it was working the radiators were never more than tepid and hot water was seldom available in the single bedrooms to which it was piped. **Lighting and power** were scarce at best. Electric fans were available but the single generators supplying the village a electricity was grossly overloaded and the supply failed in frequent intervals. At best the chambers of the leaders glowed dull red. Staff received an emergency kit portable and portable wire, tape wires to hot water blankets and hot water bags.

There were difficulties with the cold water in the operating theatre. Before war a man heated by an electric radiator but this could not continue during an operation under general anaesthesia. The patient was kept warm with blankets and hot water bags and only the minimum required area of skin was exposed. Dr MacEwen believed that there was no evidence that surgical shock was increased by the conditions in the theatre. Usually the only secondary lighting available in the operating theatre was candles, and these were in short supply. Electrical blankets put the electric appliances out of action and we had to be made of candles heated by multiplexed grids — and these were small and slow.

Water was derived from a mountain stream miles away. The Russians claimed it to be contaminated at source but the mountain and plant were not polluted in any way and this could not be suspected as all water was heated until sufficient chloramines were available in the hospital. The effort made by the Russians to provide hot water and baths, though commendable, was much appreciated, particularly as their own hospital had neither facility. Hot water for the operating theatre was provided from aerolines. Each week hospital linen was sent to the village laundry and staff and visiting patients used the village's communal showers.

Sanitation was a constant worry and staff and patients have vivid memories of the latrines in the hospital. All but one was of the Russian type — a raised rectangular dish surrounding a hole in the floor, rubber or metal sockets in the floor entered and feet, sometimes held on to. Planked by chains, the floor curved from a trundle bed floor occupying the floor. Beyond from there the floor below being an flooring of paper at ground level

was an extremely disgusting feature. Chamber pots passed from Russia to supplement the latrines did not arrive. Left latrines like stools as a person making the journey from the ward to the Russian toilet on the third floor and the special skill required to use the apparatus.

I remember we had to climb the open staircase to reach the dirty latrines making sure you were well supported and most gloves to prevent you from leaving skin on the floors metal stands on the handrails. Once there it was a difficult task to perform the rudiments of hygiene — especially with a bag in place.

The GAA surgeons earned the gratitude of staff and patients by being warden stations in these latrines!

Waste disposal was by the waste carriage system. Waste passing in a willing form where it was screened and the effluent discharged into the lake without further pollution. Refuse from the whole area was dumped within a hundred yards of the hospital, the site limited by army dogs and a curtain of fire and foul smells at summer. Refuse was removed at regular intervals to be dumped near the lake. When the method of refuse disposal was appreciated the local Russians and called drawings from the hospital were banned.

STAFF AT RUSSIA VARIOUS

Some of the staff of the hospital are shown in Figures 1 and 4. The power of the two armed medical officers (Medicines) used in station and the other (Medicines) as mentioned. With only two medical officers duty was mainly routine except for local medical but from time to time between concepts the medical officer at Poltava returned, the one or other of the hospital doctors allowing them some leave. Surgeon Lieutenant MacEwen was promoted while serving at Vnukovo. He was released on 2 December 1943 by Temporary Surgeon Lieutenant Commander S M Jupp RNVR who was later to serve in RNVR in the Pacific and Sydney Australia Temporary Surgeon Lieutenant T R Simpson FRCS RNVR remembered as a fine surgeon and person, joined at about the same time. He left in May 1944 to be a surgical specialist at RNVR headquarters. The third and last MRC was Surgeon Lieutenant Commander E A Price DSC Royal Navy who joined in August 1943 and arrived at Vnukovo with the hospital about 10 July 1943. He remained in the Royal Navy after the war, developed a special interest in chemical warfare



Figure 1. British Veterans with the 50th (Pz) Sapper Battalion. Middle row with the author, 4th from left with Sergeant Lumsden (2nd from right) to left.

and defence and served as the rank of Sergeant Captain in 1930.

The first dental officer, Sergeant Lumsden (21 M A Batts L101 RNR), had been trained in basic auxiliary work and this special experience proved most useful. Unfortunately he left on 1 March 1943 somewhat earlier than planned, having sustained a leg injury while walking from the camp earlier that day. He reported himself fit for duty in August and returned the war. His replacement, Sergeant Lumsden (Dx 1 Batts Wiltshire RNR), who served until September 1944, Sergeant Lumsden (Dx J B C Batts RNR), and by several it have been suggested several times for England as they had been in that year, arrived and the hospital closed then moved to Moscow. Each dental officer held permanent clinics at Archangel, Moscow and the rear zone.

When the hospital was established there was one British Chief Petty Officer in possession whose experience was much valued, three Petty Officers, three Leading Hands and twenty Sick

Boys Apprentices. The SHCPO was specially trained in X-ray work. The Petty Officer, were all in reserve departments, two were dentists trained and one trained the surgeon, the other the medicaments. The third SHCPO was a trained dispenser. The rest of the ratings were on Hospital Duty assignments. Their personal equipment included disinfected types, rubber boots and gloves and each used in an appropriate and capacity in Vantage. Two ratings trained themselves in Polio and usually accepted as interested. Two on rotation were employed full time each day sewing and splinting that made into intended to find the first-hand range and boiler. When possible they were admitted to day but small numbers for a late staff was unnecessary.

When contact was made, stopped in 1944 the Russian suggested the relocation to a Russian Compound for the hospital to make spring the SHCPO and two SHCPOs involved in 1942.

Also on the staff were two cooks, two stewards, a Supply Petty Officer and an interpreter — the role of Sub Lieutenant R.



Figure 1. General Montgomery (second row, third from the front row) left to right: (1) thought to be Dr Percy Nye; (2) 'saviour' consultant surgeon, Surgeon Lieutenant Commander (later) Surgeon Lieutenant (2d Master) and VAD Commandant and 1st charge nurse Officer.

General RHYM, who joined in January 1944 to relieve Sir Lamberton Thre RHYM. The interpreter was a busy man in his local Romanian spoke English. He made arrangements for entertainers, laundry, restaurants and found time to organize lessons in Romanian for the staff. The Supply Policy Officer acted as 'Catering Officer' for the hospital and supervised the large stacks of food stored in the village for feeding survivors. The situation was eased considerably when the Koreans continued to be repatriated as there were four women at Chisinau and 100 more dates.

The Canadian heterogeneous staff worked closely and worked together to shoot insects, to his chagrin. Robert (Dagrell) remarked that 'it was a wonderfully happy set up and although there was an almost total lack of resources, I can remember no serious shortage of any kind.'

Presence of mosquitoes duly attracted with grasshoppers and other vermin was encouraged — treated as if necessary. It was Admiralty

policy that the maximum period to be spent in North Korea should be nine months. But several ratings have written that the threat of returning ships and the refusal of the American authorities to grant visas to ratings meant that the period was usually extended to 12 months and was much longer in some cases. Yet among the staff there were no cases of sexually transmitted diseases elsewhere on the trip; the most probable reason being that the work was interesting and free from boredom. In fact the staff remained healthy apart from occasional episodes of diarrhoea — a very common complaint in the area. The hospital was re-staffed in October 1944 and August 1944.

FOOD

Almost all food was brought from the UK. There was sufficient food but the local inhabitants (2000) had to be brought by rail from the coast and General's handling of the railway made all

transport difficult. Priority was given to feeding those fighting forces. Moreover, Kuznetsov food was not calculated to appeal to European stomachs as it did of soup. Much bread, processed pork and sometimes meat (though not very high and plenty of salt fish. The fish was not chosen before eating and thought as necessary rather was high in appearance was not appealing. Kuznetsov food and occasionally much quantities of butter, cabbage, potatoes and onions were supplied locally. In summer there was an abundance of fresh fish in the lake and daily fishing parties of members of staff brought in puffers to supply the hospital. The 14th was covered with balloons in the air and against poison gassed balloons to supply the hospital. Apart from these supplies of food and such materials of fresh water and eggs as could be speed to the 16th on his shipping trips to receiving ships on three subsequent visits, the food came from the large store of stored food maintained at the hospital.

Mr J. H. Moody arrived at the hospital from October 1943 until August 1944 and usually with pleasure his car, plus food including tinned corn and tinned peaches and the taste of fresh produce obtained by a sailing conveyer. Mr P. Anderson, a patient during the winter of 1944/45 recalls that transport brought a meat part of the diet.

Surgeon Lieutenant Commander McEwan considered the diet to be adequate in vitamins and quantity but greatly deficient in vitamin C, so a daily intake of 2 lb of oranges and was made compulsory for all personnel. Most of the staff also took capsules of vitamins A and D in winter. The problem of feeding the patients was eased by one factor. First most of the patients were young healthy men admitted on account of injury and not of disease and all hours after operation were able to take the ordinary diet. Second the average length of stay was not long. For the few medical cases, soup and milk porridges provided a light diet. Those requiring special diets were referred to the United Kingdom if it was an opportunity arose.

STOPS AND EQUIPMENT

All the hospital's equipment, both bedding, drugs, and dressings, came from the United Kingdom. Almost every piece of surgical equipment and every drug likely to be required had been included in the initial provisions and most of the first items overlooked were sent out quickly when requested. There deliberately arose

from the absence of apparatus for applying bone traction from the natural back and the device that was applied through pulleys to the floor and ending in rollers by levers. Bands of elastic fabric, cut down to the thickness were cut up in short periods ready for use when from carriers.

Absence of tools to dislocate accepted as commonplace in Russia but not available in North Russia caused most difficulty. The portable X-ray apparatus was adequate for the recognition of bone abnormalities but gave poor definition in their work. There was a microscope but no haemocytometer and only a simple bacteriology unit. An intestinal unit appeared, a case of some illness or venereal disease. Many cases of venereal disease had to be sent home for test or cure as Russian facilities were already stretched and no more from the quarter was issued to carrying out to occasional World War II patients.

TRANSPORT

For the first year or so the hospital had no ambulance for the Russians in Vanga had three and were very willing to lend them for use in the village. A Daimler-Benz truck once supplied from the U.K. was useful for walking patients or carrying patients. One of the trucks made ambulance to allow it to carry four patients and Mr P. Tynes, who drove the ferry in 1943/44, recalls that this proved very successful in times when patients were coming in rapidly such as after the Belarussian battle. Trucks were placed round the wheels in winter.

Over the mid-winter to the winter climate soon brought the vehicle was an almost all state of disrepair but it was still the vehicle mode of transport in the winter of 1944/45 as Mr Morris Moffatt, a surgeon from HMS Comander, reported on the night of 11 December 1944, recalls being transported rather roughly in the usual ferry to the British hospital in Vanga. By that time a Land Rover type vehicle and an ambulance had been added to the hospital's assets. The latter having been at home from U.K. for some six months before it was off loaded, overhauled by the 20th to repair the damage of the sea and weather and set to work.

Most casualties were removed directly from newspapers, destroyers and mines, ships which came alongside the deep water piers to discharge their wounded men the ferry or ambulance with the assistance of landing. Casualties and other survivors from enemy ships (including wrecks) in the lake were brought to the pier by canoe

craft in the hospital had no special under-Caucasian from the West in Poljarsk could be brought over by an motor boat or high speed launch if they were to be used the journey and not permitted. Obviously they had to be moved in the local Russian hospital. Though Marmaruk was only 17 miles from the road to Yuzovo was cold and much broken by frost making for a most uncomfortable ride in the heat of summer quite unlike the car (groups of up to 10) and not suitable for all or shocked patients. Moreover, in autumn and winter it was often blocked by snow and ice. Transporting patients from Marmaruk by water was not feasible as there were no boats, possible for stretcher cases, and adding the hospital in winter could require a journey or being transported by sea in a bulk container for days in a late Russian Lieutenant Commander McEwan had personal experience of the trip taking 22 hours on one occasion. For these reasons, patients injured on training roads or landed at Marmaruk had to be admitted to Russian hospitals there until they were fit to travel to Yuzovo.

DISPOSAL OF PATIENTS

In the hospital at Yuzovo patients received only preliminary and emergency surgical treatment. Injuries were reduced and plaster was applied. Many were transferred to the United Kingdom for further treatment under more suitable conditions and to keep the beds free for further casualties. Other patients remained in the United Kingdom were those who were evacuated from the services, cases of injury sustained or medical disease for use of care after preliminary treatment. For patients whose ships were no longer in the Kola hole were returned to UK.

Small numbers of non-casualty cases were evacuated routinely in motor launches taking some longer days. Caseloads were not specially where large numbers of casualties were fit to travel or there was some urgency and in those circumstances the boats can look but five days. When possible, a Cessna flying boat was employed for patients in the long sea voyage just an added source of injured men, especially those with limbs in plaster, as conditions meant this to be exposed. In every case it was assumed that ships taking patients home carried a medical officer. Transfer was more difficult in summer as there was no time traffic by sea so those patients had to go by air sometimes had to wait many weeks for passage. Russian Lieutenant Commander McEwan considered that most of

the patients he saw here by sea was adversely affected by the voyage.

RELATIONS WITH RUSSIAN MEDICAL STAFF

In general, a friendly liaison was established with local Russian hospitals and their staff, who were always ready to render any assistance within their powers though their scope was frequently limited. Within a fortnight of us of the British medical team arriving at Yuzovo the doctor in charge of the Russian hospital on the beach below dropped his casual reserve, appeared genuinely friendly and paid frequent visits. The British and Russian doctors, not socially and professionally and discussed subjects freely — the senior Russian doctor spoke English. The Arctic Hotel at Marmaruk was a favoured rendezvous.

The British staff often gave a number of general consultations in the Russian hospital before in the request of the doctors. On several occasions the British surgeon was called upon consultation on a Russian case and British medical officers were invited to observe operations. The Russians in the hospital below had no X-ray apparatus so their patients were X-rayed in the British hospital. They were also given small amounts of ophthalmology, plates of Pers and antibiotic acid and recognised by supplying antihistamines, treating diarrhoea and carrying out dental work. When after a few months the Russian officer was replaced by one who spoke no English and appeared to be less sympathetic, then his predecessor the exchanges continued but the professional and social contact ceased.

The inability of the British to speak Russian was a major barrier to establishing friendly contact with the Russian villagers. They were polite but not anxious to have much to do with foreigners, so little was seen of the way they lived and how they lived of their views. Contacts on the first party found the ordinary Russian people to be helpful but very laconic and they had to be careful as the higher up in Russia did not like you getting too friendly. For most of the British were the only contact with ordinary Russians was with the medical officers, the nearest allowed into the hospital to see her and young children who would wait on the stairways to bring Russians very badly for requests. One thing results that they were made understood very clearly that there was to be no discussion with any of the Russian who came in to help or with any other Russians.

Relations with the Russian authorities improved daily and by June and October following the long awaited landing on the coast of Europe in June 1944. The local doctors and all authorities did all in their power to help but actual relations still left much to be desired – only the politically reliable dared to be seen often in the company of the British.

RECREATIONAL ACTIVITIES

The necessity of the task was appreciated by the Senior British Naval Officers. North Russia and the importance of exercise and recreation was soon recognised. Little could be done in the dark days of winter but, in spring, skiing, skating and sailing cruises were available and in summer fishing, walking and, as there were few hospital grounds, golf were allowed to go on here to Morskoy or Archangel on board.

Poker, cinema parties and sporting fixtures were arranged from time to time. Mr T. A. S. Mundy recalls: On one occasion in 1943 we attended an evening in a local hall to see a chess match which was interesting and on another the hospital played against a representative team from the Russian Navy at Morskoy Stadium. Dr Michale, who it may be recalled spent two considerable days with the doctors, recalls a tale, possibly apocryphal, that the arrival of doctors for the winter was well accompanied with double trouble with a visit by a troop of Russian acrobats such a treat for Kamuk?

Mr Barlow, an AB present from Cambridge in the winter of 1944, similarly wrote of afternoon sport walking, enjoying tobogganing down the slopes, and skating below pavements. A Russian visitor who shared this winter gave him one of his winter which he still has. He said others could go to the cinema, a small room filled not only by many people but by food made made by Russian smoking cigarettes consisting of a few sheets of tobacco at the end of a long narrow paper tube.

Mr Greenfield recalls that in 1944/1945

We held Sunday morning services in the wards. I played on a little battery organ donated by one of the RN escort ships. We dined when we could during the daylight hours, and walked. Indoor table tennis was our only sport. Once played a Russian football team – and got murdered!

In January 1943 RSE, Ranscombe + Kate Kloss + 1944 Cassander + concept party gave a get together on one of the weeks for the patients and staff.

Mail was very precious, indeed any news from home was sought after avidly. A patient recalls: 'One very exciting day the pilot of an RAF Mustang aircraft, specialised for photo reconnaissance work, landed dropping with him that day's papers from UK – only three hours away for him!'

CLINICAL ACTIVITY

There were 700 admissions to the hospital, 140 as a result of survey work. The majority of these patients and the three of these admissions are shown in Table 2. By far the largest number admitted were Royal Navy personnel (40%). There were many smaller numbers of the UK Merchant Navy (17%) and then of the Soviet and American fleets of the Western Allies and Dominions (14%). Small numbers from local Army and RAF units were treated to wear a Royal Marine flag's gun crew. The crew of a Soviet (USSAF) motorist (one brought in dead) and three Norwegian landers including the only woman treated in the hospital.

Clinical activity varied markedly from quarter to quarter (Figure 3) being influenced to a large extent by the number of surveys arriving, mainly when against them, closure of the White Sea Ports by ice and two major surges of engagements. In general, a was greatest in winter when access to Archangel was denied and land when surveys moved on summer because of the increased risk of attack on prolonged daylight and during deployment of navy/land and coast shipping lines to the Mediterranean for Operation Torch in November 1947 then in the Channel for Operation Overlord in June 1944. The peaks of activity in the first and last quarters of 1943 were due to casualties from the Battle of the Narvik Sea and of the North Cape respectively and both are discussed in considerable below. The high number of admissions in the last two quarters reflects the very high level of 12 hour activity in the approaches to the Kola before the last months of the European war.

There was a substantial background of injury and disease undoubtedly of all identifiable in many cases (Table 2). This should serve as a reminder that there may be a major source of morbidity in any conflict. Lack of variable circumstances themselves demanded that the Ranscombe of theory or injury which qualified for admission to RSEB Hospital was few in number and were admitted for conditions which themselves might have been treated on an outpatient basis. These include various common cold and severely infected sports injuries.

Table 1 Classification of source of admissions and nature of injury or disease: RMAS Vung Tau 1942-95

	Royal Navy	UK RAF	Filled Boats	Other unexplained visits	Civilians	All
Enemy action	167	14	15	12		148
Other injuries	63	30	38	2	1	133
Gastrointestinal	48	40	22	2		112
Neuronal	22	23	20	1		65
Skin - superficial infections	25	11	3	6	1	46
For nose throat	22	5	3	4		34
Soft tissue	27	5	2			34
Psychiatric	11	12	5	1		29
Urogenital	12	4	5			21
Musculoskeletal	5	6	8			19
Respiratory	6	7	1		1	15
Dental	5	1	2			8
Nervous system	5	4	4			13
Cardiovascular	3	3	1			7
Other	5	5	5			15
All	424	178	142	28	3	775

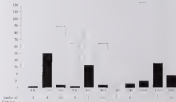


Figure 1 Total (□) and enemy action (■) admissions to RMAS Vung Tau each quarter: Quarter 1942 to last 1995

One hundred and twenty-two admissions were caused by injuries at work as a result of non-musculoskeletal accidents and very occasionally fights. Medical officers were particularly concerned about the number of

cases of venereal and gastrointestinal diseases and psychiatric disorders. The relative high incidence of skin diseases, especially skin cancer, and measles did not cause particular concern.

Wang's illnesses, in the opinion of Korean Medical Officers, had been caused by a severe cold. On 12 April, Kungmin and Wang were taken to the Chang Rungdon Hospital in Seoul. According to the medical records, Wang's blood pressure was 160/100, his heart rate 100, and his temperature 38.5. It was thought he was suffering from a common cold. Wang was given antibiotics, but after three days his condition did not improve. On 15 April, his temperature rose to 39.5, his heart rate 110, and his blood pressure 160/100. Wang was given more antibiotics and was moved to the Chang Rungdon Hospital in Seoul. Wang's condition continued to worsen, and on 17 April he was given a blood transfusion. Wang died on 18 April at the age of 35. His death was caused by a common cold, which had become pneumonia. Wang's death was a tragedy for the Korean people, who had lost a great leader.

Cardiovascular diseases, including 29 cases of angina pectoris, accounted for 11% of the deaths for a wide variety of conditions. A few were due to parasitosis but the few others most were due to a fact that the disease was very common and was mainly located on an septal heart. In the summer since receiving control to have treatment of many of the patients taking in the day, it was thought to be a case of coronary heart disease, although it was not possible to confirm this.

Only the most severe cases were admitted to the hospital, and the rest of the day and night were treated with sublingual nitroglycerin. The primary cause of the village conditions and other disposal and unsanitary conditions of the day were thought to be important factors in the spread of the disease.

The chronic diseases were primarily anxiety state and depression. The first model was comprehensive bipolar disorder with patients' coping as a state that were unrelated directly from Auerhach and did not appear in the biometric ratios, and others, were related to lifetime accumulative for further increase in North-East but not all on medical grounds. The principal causes of depression were thought to be the duration of running work in the coal-mining company. Failure to take advantage of such the stress for recreation in external climatic conditions, absence of rest - which was always irregular and was sometimes held up for weeks while it was assessed as necessary - and the accumulation

the length of each person's stay in Kansas as the Kansans were likely to have come to attend. Fortunately none of the largest staff appear to have been affected — perhaps because of the variety of their work and the strong leadership they were given.

[illegible]

The first casualty from enemy action received in the hospital was reported on an air raid in Birmingham on 1st December 1941. He was soon followed by those from the Battle of the Bulge, too.

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After a three-month gap occasioned by the two-week French trial of the controversial book, Conway (with the new PW profile) got out in mid-December 1912. More than a decade later, large crowds would still go to his lectures as well as art. The latest ships leaving Berlin accompanied by *Shildes* and *James* reached Köln late on Christmas Eve. The lastest ships, of 1913, left on night of December 31, accompanied and late weather notwithstanding the command of Captain H. W. Herberichs. DGG did not share such good fortune as in the morning of New Year Day some 100 miles NW of Köln late they were intercepted by the German pocket battleship *Exeter*, the heavy cruiser *Admiral von Siedow* and six destroyers.

[illegible]

Algeria's position with the international community and its relations with the UN are discussed.

from the investigation that she was seen whilst walking lost and exposed on the island itself.

Onshore casualties From the ship's log a company were killed on the beach and a further three died of their wounds before they reached hospital. As the damaged ship began tilting 20° to Vango the twenty three survivors wounded were treated by three Medical Officers, Surgeon Lieutenant C E Holland RNVR and two RNAs, Huxley who were treated the Damaged Service Crew and Damaged Service Medical respectively. The casualties arrived in Vango on New Year's Day 1943 and were taken to the recently established RNARS in consultation issued by the Surgeon. Surgeon Lieutenant Macdonald remarked that all had received good first aid treatment and on admission recovered from their initial shock.

Virtually all the injuries had been caused by shrapnel, one man also had blast lung. Eight, including Captain Maybrooke, required very urgent treatment and were taken to hospital for resuscitation and treatment of their wounds under personal supervision to meet as possible that situation. Three wounds were badly ruptured, whenever possible were sutured. Plaster was applied to all cuts with fracture or serious loss of tissue. Each case was given 1000 units of anti tetanus serum as a routine measure and two tablets of arphenadrine every four hours for three days. Two of these patients died within a few days but this was not anticipated as none of the nature and severity of their injuries.

Immediately those most severely injured cases had been operated on eight more casualties were taken to hospital. Five were examined and treated under personal supervision. As he considered that they all showed pathological infection of their wounds, Surgeon Lieutenant Macdonald prescribed sulphonamide instead of arphenadrine. They were also given 1000 units of anti tetanus serum on admission.

Severest treatment of these first 30 cases took twelve hours and definitive treatment of the remaining seven men who had suffered more minor injuries from shrapnel was postponed until the following day. Although shrapnel was most deeply wound and going so fast to symptoms it was left in situ.

While at RNARS Vango Captain Maybrooke learned that King George VI had cancelled from the Victoria Cross for his gallant work in defending the survey. For months afterwards SA's pointed out with pride the fact he had managed. On 11 January he was arrived in hotel the destroyer HMS Obdurate and with the ser-

entary of the most severely wounded, all making convalescent progress, had an eventual return to UK for further treatment. The remainder of the casualties had been returned to ship by 12 January.

Archie's casualties Within thirty of Obdurate ship a company died on the beach, among them the Commanding Officer and the Medical Officer, Surgeon Lieutenant J L B Macfarlane who was posthumously Mentioned in Despatches. As the enemy ships withdrew survivors went to the nearby island Northern Cays. Many of the 33 signs on board were in a bad state. Obdurate's Medical Officer, Surgeon Lieutenant Murray Wood RNVR, jumped from the quarterdeck of his ship to Northern Cay and for the next thirty hours operated on the wounded with shrapnel, including him, against the ship's movement. Only one of the 31 died, Surgeon Lieutenant Wood's courage endeared him and his actions were recognized by the award of the Distinguished Service Cross.

Northern Cay reached Vango on 1 January 1943 in the night. RNARS Vango were just leaving beach from being on duty for three days clashing with the Obdurate casualties not severely wounded were from Obdurate, were admitted. They had been in the water for some twenty minutes and on board the enemy torpedoes for almost three days. Their condition was less satisfactory than that of those from Obdurate on admission and their wounds poorly sutured. They were given anti tetanus serum 1000 units, one per patient serum and started on oral sulphonamide as antibiotics. Having been transferred under personal or personal and other conditions, shrapnel was removed and wounds cleaned and corrected healthy tissue. The dental officer used a compressed fracture of the lower jaw. Over the next few days five more survivors from Obdurate were admitted for treatment of gunshot wounds. These persons responded well to treatment and all but one left for the United Kingdom by despatch on 11 January with those patients from Obdurate and the single casualty salvaged from Obdurate. The last casualty left on 27 January.

At-Risk Casualties

During January 1943 37 of the 39 merchant ships conveyed RAN 1892 and RAN 2 reached their destinations. No casualties were admitted to Vango. The merchant ship 1893 was bombed by aircraft with slight damage to one ship. In fact January four merchant seamen who had been



Figure 4. Patient being treated at ROKAB Hospital in Kofu, at a Japanese Hospital in ROKAB. It is thought that the other one is also a long detainee at a prison camp.

wounded during bombing of ships at anchor in Kofu were admitted. In February and early March these ships were damaged and not work by bombing which kept all Japanese. Japanese warships are a constant subject in the Japanese hospital ships were transferred to Yongsu over the next few weeks. Of these patients, Makino's last transferred. The work of care transfer in the Japanese hospital has not been managing. Presumably there have no personnel and by the time they are admitted here some weeks have elapsed. It has been possible to do better for such cases with our hospital facilities and they have been referred to US for further treatment. The Japanese hospital are of course understaffed and overworked.

Cessation of Japanese Convoy

The last, cruise S. Karakura dropped out of the fleet during the night of 24-25 March and by 26 March had moved north to Akita Bay in company with Tokyo, Kure, and auxiliary destroyers. This and the increasing loss of

depths demonstrated the convoys had heavy losses of major losses were to be avoided but there were not available. All being required for the fleet of the Atlantic which was reaching its climax. The convoys were stopped to Kofu's bay — and with this the planned source of food supplies and fuel for the hospital staff and other Allied personnel serving or connected with these ships at North Korea. Nevertheless made special food and coal delivery runs.

The Route of North Cape — Sinking of the Scharnhorst

Convoy activity re-commenced in November and five convoys of 70 merchant ships, at all made the journey without incident up to 20 December. Having received intelligence that Scharnhorst was to be loaded which means the Commander in Chief of the Fleet, Fleet Admiral Flown, with Duke of York, at the convoy escort. Some time brought through to Kure for the first time visiting Kofu's since the evacuation here before moving to Iceland. While at Kofu for repair

the hospital and may have made a return visit on 27 December to meet those who had been admitted as casualties of the battle which was in progress at the sinking of the *Scharnhorst*.

Convoy JP153 with 79 ships sailed southwards on 26 December and three days later the return convoy RAMSAS of 22 ships set out from Kola accompanied by the mines for both convoys through the Barents Sea. The return *Zeppelin*, *Nordkapp* and *Bayfield*, Admiral Fraser with the *Duke of York*, and *Assommoir* sailed from Iceland for the Barents Island area. Each force also included destroyers among which was HMS *Kamovet*.

Scharnhorst accompanied by five destroyers, which sailed in company of the convoy and played an part in the impending battle. In the *Atlantic* for the return *Barents Sea* on Christmas evening. After several skirmishes she was engaged and damaged by *Nordkapp* opening well ahead of the convoy with her follow cruisers and armed forces of these cruisers opened fire and *Scharnhorst* was hit again. *Bayfield* was seriously damaged by German gunfire. At about 1700 *Zeppelin* illuminated *Scharnhorst* with searchlight then *Zeppelin*, *Nordkapp* and *Bayfield* engaged her from one side and *Duke of York* and *Assommoir* from the other. In the last evening the crippled *Scharnhorst* was sunk by torpedoes with the loss of all but 56 of the 3600 on board. No merchant ships were damaged.

One officer and six men onboard *Nordkapp* were killed and others wounded. A storm came which had convinced me that your previously mentioned severe losses of injured crew when a shell missed a turret and though falling to explode ignited a charge of oil fuel. There were 17 casualties on board the torpedoed *Kamovet* all carried by small rubber rafts from the enemy ships to the ship closed for a torpedo attack. Two men on board *Assommoir* were struck blind and spent an day made a night run prior to sinking 24 hours after her torpedo.

All those wounded were taken to Vaanga where the hospital staff were assisted by MCs and Sick Bay staff from the cruiser. Casualties from *Bayfield* arrived first at about 2100 on 27 December. Eleven were admitted from *Kamovet* in the early hours of 28 December. Two patients were transferred to *Assommoir* and died there afterwards, another died on 31 December and a fourth developed meningitis following a compound fracture of the skull and died on 31 January. Almost all the others were referred to UK on 29 December. Some from *Nordkapp* on board their own ship, the others taking passage

to *Bayfield*.

Sinking the *Scharnhorst* made significant victory for Arctic convoys as only *Zeppen* remained in a potential big ship threat. The survival survival subsequent battle has eventually occurred on 12 November 1944 having been dominated by RAF Lancasters who attacked off the island of Hvalsoy near Tromsø.

Mass Burial Reception

Two convoys sailed undisturbed in January 1945 before *Bayfield* set out for Kola on 17 January with a strong destroyer escort. Towards the end of the voyage the convoy was attacked by a group of eight U-boats and these encounters with *SS-Peter*, *Arcturion*, *Penelope*, *Arcturion* and *Arcturion*. On 28 January some 150 survivors from these ships were landed at the hospital, completely isolated from the hospital stocks of supplies, clothing and with the exception of a severely ill man from the *Penelope* *Arcturion* (see The Death of Margaret Langston Wood DSC below) were referred to the hospitalised hospital ships. To the south of Hvalsoy Island, the escorting destroyer HMS *Arcturion* had her stern blown off by a torpedo from U 174 and had to be scuttled and on 1 February some 200 survivors from her were landed and accommodated at HMS *Arcturion* and they could be referred to HMS *Arcturion*. Apart from again reports there were no casualties among these survivors.

At daylight hours and the number of enemy aircraft being sent to north Norway increased to did the need to provide further escorts for the convoys. Fortunately the battle of the Atlantic had been won and escort aircraft carriers were now available so Admiral Fraser changed his policy of splitting the convoy into two to one of sailing one large heavily escorted convoy. HMS *Arcturion* sailed on 26 February still back on sea. Though no replacements were lost on 26 February the escort destroyer *Arcturion* was sunk at the Barents Sea by a U-boat using the new vessel *Arcturion* *Arcturion*. The captain before her was could be taken off. Eighteen survivors were landed at Vaanga on 28 February to be cared for and accommodated. All had been in the water for only one had sustained foot — the only one who had not been wearing boots.

Death of Margaret Langston Wood DSC

The severely ill survivor landed from *Penelope* *Arcturion*, an eighteen-year-old American woman

had had a miserable week. On 23 January the Master of the ship had called HMS *Sever* - a Portuguese forest destroyer - to come alongside as he required medical aid for a man with abdominal pain. Her Medical Officer was living in Tarsanaki. Doreen took a landing by megaphone and was made to transfer to the merchant ship when *Sever* was ordered to depart and had to move away. In his autobiography Robert Doregall, taking passage in her appeared more in Vitebsk, talk of the medical officer having having words to say about his Commanding Officer not allowing him out to transfer? The doctor had no means of knowing that the CO's refusal may have saved his life as just two days later *Forlaker Barker* was torpedoed. Taken from his bunk by the explosion the man with abdominal complaint of the supposed condition, reached a hospital, was picked up by *Sever* in 1939 on 26 January and taken to RMAH Vitebsk where he made a good recovery. Tragically the medical officer who had succeeded in getting on board the *Liber* ship from another destroyer in local bay, Skipper Laurence Hood RMC, who had acted as 'wall for the survivors of *Albatross*' was never seen again and was presumed to have gone down with the *Forlaker Barker*.

Convoys Suspended Once Again

There were convoys loaded with tons of daily use of 114 merchant ships (about much U boat activity before preparation for the Allied invasion of Normandy) demanded that every possible ship be made available - including the large number of empty hospital ships lying in Russian Ports. Forty five sailed on 17th in RA 49 before convoys were suspended yet again - all for one reason only.

Victims convey a clerical file in Vitebsk was very quiet over the summer but they remained to August the first (PWP) resulting in the sinking of the merchant ship *Barley U 344* with heavy loss of life. Sunked U boat, were were suspected as large numbers outside the Rule later but had caught early late evening against the next night conveyed. In September three merchant ships in American aircraft downed the marine gunfire were brought in the hospital. The pilot had died as the crashed in north, one of the crew was. One on the ship and down and the others killed and collected covered bodies on board.

Two casualties from the Argentine *Blanca Alvarado* torpedoed by a German boat from 19-20 when carrying RA 48 were admitted in

November. One had wound deep wounds of the facial bones and the other was suffering from extensive lacerations, both unable to sleep since the attack - he had been about to visit his home dock when it was hit about by enemy aircraft leaving him the sole survivor of his crew.

The relief from Allied shipping was reduced very significantly on 11 November when *Elgar* was sunk.

A month later on 1930 on 11 December 1941, U 569 torpedoed the destroyer *Camacho* shortly after her departure from Rala. Her bow was blown off so that was swept across first back into the hole and up on Rala Dry Dock. Sixty tons of her cargo were killed. Ten injured survivors were admitted to RMAH Vitebsk (principally suffering from lacerations, fractures and minor trauma). The then Medical Officer of *Camacho* has recently mentioned as few provided for him for the help given by the medical staff at Vitebsk (principally and without fail - it was an ever ready lifeline. He became an honorary member of the staff for the next few months until his return to UK and was given the job of looking after the medical work of the ships in Murmansk harbour.

The wounded *Camacho* survivors were accommodated on board the odd ship in dry dock as delivery of food plugs from UK was stopped. Life was very uncomfortable, there was no room for a bathroom and no dormers on the hulls. Food other than food block based was from ration supplies. The ship moved in Russian for some months before returning to Chatham in July 1942.

Good water allowed some accommodation in the hospital so by need to help prevent the health of the men of *Camacho* and they were taken in batches from the submersible conditions of their damaged ship and given their rest and recreation.

Former Ordinary Seaman (PWC) Mills was one of those men serving at RMAH *Camacho* reporting Convoy RA 42 where she was damaged and left the story.

Late on board a badly damaged destroyer in dry dock in mid Winter in Arctic waters was no bed of snow. Then out of the blue came news of an invitation to spend a week in a (dressed) ward in the hospital to give me a break from this confined ship routine. On arrival by ferry we were each given a bar of chocolate and a fresh egg for supper. We slept in beds - some had to 'stand'. We were exactly on our own and were not treated by anyone.

We had a very relaxed routine (about 1930) by hospital staff with a day of tea on board in

the morning. For breakfast we had corn flakes, some sort of hot drink followed by bread and jam, syrup or marmalade — sometimes all three — and tea. Our only clothes were "burlap" tops and trousers the RNAs in some heavy slacks when required.

From about 1000 we were free to visit patients on the wards. At one time I "ran" the myelogram as he drawn by a talented fellow physician — at an patient might recovered from the back injury. We read X-rays went for walks, employed subjugating stores, the men covered slaps rowed together with some of the patients who were fit enough to row, hike and walk again. We visited the cinema in the nearby Red Navy Club. It was, however cold and we turned in early in the evenings. There was a film on the Tynes appeared to keep our engagement as we shared interest in bed.

Lights out sounded at 2300 and we each had three or four candles "winked" by way of our toilet to give us light to read or

I knew not whether it was the colonel or Polyzos, our new MO at some captain or perhaps the MO at the hospital who thought of and arranged the war boat was brilliant idea and greatly appreciated by all who used it was of your head and really put new spirit into us.

In the next few convoys were now being attacked successfully but in the last of the convoys of 1964 around midday when Kola left the coast current Oswego Castle was torpedoed by U 992. By exceptional efforts she was towed into harbour by Blenheim in her headland — and later became a head land. Her wounded survivors were admitted. One had a compound fracture of the skull which required surgical treatment and there had sustained long bone fractures.

Convoy RA64 arrived at Kola the day after on 17 February. Before it got under way 500 Norwegians who had sought evacuation from the island of Hovoy since the entrance to Alneshof were taken off by destroyer Zander, Bore and Zor and Blenheim along the steps of the coast. There were 4000 men in the hospital, one a 30 year old woman was desperately ill. It reached the United Kingdom before the end of the war.

Many 17 boats were now active in the Kola approaches 14 on one occasion, U 966 captured Luck, sweeping ahead of a minefield (the minefield) and was towed back to harbour and landed over to the Blenheim on ship once the dead had been removed for burial. One casualty was admitted in Vinga, a rising with

numerous splinter wounds and a penetrating injury of the right ear with a minimal skull fracture body. Russian ophthalmologist treated with his own better he was taken back to UK for further treatment in the eye.

U 1111 impounded the freighter Bismarck Steel then the corvette Blenheim. The freighter went whole being in and back to harbour, its slightly injured survivors and one with a fractured pelvis was admitted to the hospital. Daily there was for one survivor from Blenheim which exploded immediately she was struck. Zor had picked up three survivors from her but only the one who had been running a lighted ball and buoyancy and reached shore alive, the others collapsing and dying in board the freighter. The freighter Bore was treated and took later with much loss of life.

On 26 March many survivors and casualties were received through ship Lening which was torpedoed by U 734 off Kola when morning 1965. All had been in the water in which was one missing for 30-40 minutes. Only Bismarck did not need medical treatment. Most survivors were admitted, one with a fractured femur but with a fractured foot and the remainder with soft tissue injuries.

The last convoy back of the war involved the steam carrier RA66 of 10 ships which left Kola on 29 April and faced 14 U boats during the last. While sailing Bore U 934 was torpedoed and sunk by U 934 with heavy loss of life — the last night marriage of the Royal and Deutsche Marine lost in the war against Germany. The convoy arrived safely in the Clyde a week later — on the day of the Berlin signing of Germany's unconditional surrender.

Explosion wounded survivors from Cleveland were admitted to the hospital at Vinga. Eight had soft tissue injuries, one casualty lost and six uncomplicated fractures. On the two most severely injured one required an amputation through the first thigh and the other treatment for a comminuted fracture of the jaw. As the dental officer was absent at that the second patient was transferred to the Russian Fisheries Fleet hospital 4000 military use.

Since August 1941 70 convoys had sailed in both directions and passed through nearly 1400 merchant ships for the last of 85. The cost to the Royal Navy had included one escort cutter severely damaged and two escorts and destroyers and eight other escort lost.

Mothers were admitted after cessation of hostilities. Royal Naval Auxiliary Hospital was closed permanently on 23 July 1945.

IN CONCLUSION

There can be no escaping the conclusion that the absence of appropriate medical facilities in North Rhine, especially in the first year of captivity, contributed to the mortality and morbidity rates among survivors who reached land and to ill health at discharge amongst who became ill or were injured after their convalescence had proved futile in West Sea ports. It appears that if any doubt had been given to the need for such facilities, and there must be doubt about that, the German view of the way they could give was recognition readily and that the medical supplies, a British hospital in the vicinity of both major ports was not approached. Moreover, even when the efforts of makeshift medical units were recognized by their co-terminous authority in North Rhine, the information was in the Admiralty usually was withheld and misleading and did not immediately cause the concerns which were raised.

Once the need had been recognized and German authorities withdrew the staff of the Royal Naval Auxiliary Hospital at Wuppertal, a close relationship continued to the well being of those serving locally and at sea. For much of the time they worked in conditions which approached proper hospital: water was fresh and warm, with built wardens, and was followed by a regime of personal hygiene and exercise most that accomplished by a hospital would. Housing was inadequate, lighting miserable and the food was the best good. There was little social life and recreation and entertainment was very difficult to provide. Despite these difficulties the hospital was quickly established and operated for about three years in an effective way and its work, subject to some examination, was greatly appreciated by those who were at risk of injury or illness in ships at sea. These efforts and findings are its justification.

What lessons can be learned? The experience is gained from the literature that the Allies was at first a backwater of the war, within the various depots of the Atlantic, in Britain, and that this story was little knowledge in retrospect of the conditions being suffered by British and Allied merchant seamen. I feel that there are three principal lessons to be learned in such to avoid repetition of that situation in other circumstances.

The first of these lessons is the experience of seriously collecting, recording and analysing medical intelligence so that when operations are

being planned there is adequate background information on facilities for treating casualties. Second, when entering a new area of operations, writing an early opportunity should be created to report a medical officer of appropriate seniority, experience and professional skills was the staff of the senior officer in the area to acquire intelligence, means needs and means that there are approached. Most could have been relieved earlier if the Senior British Naval Officer, North Rhine, in staff had included a medical officer of sufficient seniority to give him authoritative advice and took much the role of land command under German captivity-officers who appeared to be blind to, and continued to deny, the gross inadequacies of their system. The third and final lesson for senior commanders is to be frank in that officer's management and not properly on his recommendations.

ACKNOWLEDGEMENTS

In addition to those whose assistance was acknowledged under first part of this paper I wish to thank Dr John Levy, formerly Medical Officer of 1944 Canadian, West End of the Ministry of Defence (CDMOC), for covering in the provision of correspondence, replies from North Rhine and MEDGVA for permission to publish information derived from these reports.

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Letters to the Editor

Sir

THE RNS MEDICAL BRANCH — A PERSONAL VIEW

After qualifying as a doctor in 1963 and with three years in an Officer Cadet at the Infantry Staff Unit of the University of London DTC, I found myself looking for some military experience to act as a link to my medical career. Influenced by the Orthopaedic Consultants (now retiring lot), both RNS men, I joined HHS President as a probationary Surgeon Lieutenant (Last 6). There was no defined training or stated way role.

Apart from doing another Postgraduate training was an *ad hoc* process. Arrangements were made to go to RN Hospitals and Establishments for medical duties largely on loan with one or another specialisation and expertise. — starting as General Staff Medical Officers and as one became more experienced and specialised, at my choice in Surgery, Senior Specialist and eventually Consultant. Life was better in an RN Hospital than in an NHS Hospital.

Very seldom was one offered the chance to go to sea, presumably as this was difficult for the RN to arrange for only a two week period. In effect we became and remained and the real RN is a very useful income agency.

This was not very stimulating. When I voiced these concerns to Surgeon Commander Dudley Churchill Davidson he arranged my attachment in 1968 to the RMHS (City of London) where he was RMO and then provided all the stimuli I was looking for.¹ The following years were an exciting part of my RNS career and enabled me to do such things as a paediatric course.

Moving to Birmingham I found a thriving RNS Unit. I managed results to follow and the Army for sea, worked as Surgeon in HQ Northern Ireland. When asked for one of four in my 1970 duties, this was willingly given to my employers as the advantages of such training. There was still an Embedded War Role commitment.

In the late 1970s and early 1980s with the acceptance of the Medical Support Agreement a more concrete commitment for the RNS was consolidated — so was the President. Formed from the central force and filled its role as one of war. In order to gain expertise a lessening gap clear that the Medical Branch — Doctors, Nurses and MSAs — more often together with a totally

different role than had been perceived or understood by the RNS. Thus developed the Surgeon-Ship Training initially, incorporated with the RMHS/DTC, still on the way and now short, not going. Miss Conolly Harding, President, which probably became integrated with the RN as our roles changed with the collapse of the Western part and the change in the European situation.

Currently the RNS Medical Branch has a strong vibrant ethos supported by generous enthusiastic Medical and Nursing Officers and Ratings.

However all is not as well as it seems. With the development of independent NHS Trusts hospitals are run for hard around businessmen who for their very survival are looking at increased productivity. A member of a Reserve Forces Medical Branch is not looked upon with such favour or encouragement as when I was given six weeks leave to go to Northern Ireland. It includes a long chance are interrupted, operating lists are reduced and money is spent on loans, all of which affects the bottom line at the end of the financial year and the Patient Charter. There may not be any more integration in members of the Reserve Forces but certainly there is now no active encouragement. Doctors and Nurses, looking towards their own career development will not feel able to join the Reserve Forces.

When I was Director Medical Services I unofficially asked several NHS Hospital Trust Chief Executives what their attitude was to the Whitley Council system which gave members of the Reserve Forces the right to an additional weeks paid leave plus a further one week unpaid leave in of right. They all said that at the present time they were following this but reserved the right to change in future.

This is a worrying trend as I am not ignorant which will remove the right to leave off to the new Reserve Forces Act. It is becoming harder to find the time to join the RNS and there are evident pressures making a more difficult contact in.

The RN may also be exposed to those highly experienced Medical and Nursing Officers who are currently the backbone of the RNS. These long serving and highly experienced people are alert to the sub-spectre that the RN is short of and is crying out for. Those who hold Consultant posts find themselves at a risk in the RNS which is below the operational rank for their experience in the regular service. With the emphasis on front line first it is easy why these people who should remain in the RNS and those

Book Reviews

ABC of Rheumatology Ed. Michael J Smith. BMJ Publishing Group, 1986. Pp 96. UK £14.95. Overseas £16.00.

Like other ABC soft back volumes this is a well laid out, easy to read and easily digested text, containing over 300 high quality colour plates. Compiled from a series of qualified articles published in the 1985 British Medical Journal, there are 20 chapters including additional sections on epidemiology and laboratory investigations. Comments will make conditions are dealt with on a regional basis followed by chapters on each of the traditional systemic rheumatic diseases, osteoporosis and the recently established three crystal syndromes. Clearly written and written by experienced specialists, content is surprisingly comprehensive, and incorporates many useful tables and key points.

Increasingly recognised this book is ABCP (Parts 1 and 2) constitutes an orthopaedic text. For those in general practice it provides practical and accessible information covering increasingly common problems. Inevitably in the limited space available, much information is summarised and represents detailed text. There is little which is contentious and consequently it comes up the term Chronic work related upper limb pain syndrome.

This book is an eye-opening read, suitable as a wide range of medical practitioners, and represents good value.

R W SMITH

Consultant Physician and Rheumatologist
Royal Naval Hospital Unit, Dartford Hospital

ABC of Sexually Transmitted Diseases Third Edition Ed. Michael W Adler. BMJ Publishing Group, 1986. Pp 11. UK £15.95.

This is the third edition of a series of articles which were originally published in the British Medical Journal in 1984, and remains like its predecessors an excellent overview of sexually transmitted diseases. It follows with laboratory methods, algorithms, tables and diagrams, who is one single discipline and aims to understand. The chapters on the diagnosis and management of viral diseases are particularly useful especially in these days of western society as we as they offer a pragmatic approach to subjects to be dealt with in the facilities as we are rarely treated to simple microscopy only.

The chapters on AIDS is a nice summary of the disease, but for those interested the ABC of AIDS is a more detailed research and gives more detail of the epidemiological conditions of the disease and is also edited by Dr Adler.

Overall this is an excellent publication on sexually transmitted diseases and offers general conditions, which are quite often not given the importance they deserve in undergraduate teaching, and should be in all steps and in every library.

C N WARLOW

Department of C/D Medicine
RMS Wilson

Epidemiology of Work Related Diseases Ed. J Charles McNamee. BMJ Publishing Group, July 1985. Pp 312. UK £49.95. Overseas £55.00.

These readers who are not put off by the words epidemiology, and work related in the title of this book will be rewarded for their interest with a book which should bring a real dedication to their understanding and knowledge of disease processes which account for significant ill health.

Work related disease gives rise to considerable morbidity in the UK, costing the nation up to £1.5 billion per annum in lost production, medical care and disability and other consequences. The importance of work related disease and the role it plays in the Health of the Nation has been highlighted by the Chief Medical Officer, Sir Kenneth Calman, in his latest Annual Report. It is to highlight the role and responsibilities that general practitioners and hospital specialists have in the recognition, treatment and prevention of work-related ill health.

The book is composed of an introduction to occupational epidemiology and four major sections addressing occupational cancers, musculoskeletal diseases, methodology of investigations and finally a commentary on occupational epidemiology and medical practice and public health policy. Each section is written by an expert in the subject and is brought together under the careful editorship of Dr McNamee himself an internationally respected figure.

Comprehensive and balanced reviews of each subject has given Occupational cancers are considered under the subheadings of metals and chemicals, ionising radiation, electromagnetic fields and non-ionising waves and fibres. There will be of considerable value to clinicians who are a wide range of complex disease in their practice and the knowledge contained in their pages.

should serve to raise the index of suspicion that a worker may have an occupational lesion. Thus these subjects are also the source of rising public interest in environmental hazards in health and will enable a balanced picture to be given to many patients who may be concerned.

Not only acute disease and injury, included for review is a comment on the common manifestations such as asthma, skin disease, back and limb disorders and stress. The effects of work on reproductive and general interest with the theme of ergonomics/physiology are reviewed as are work related psychosocial effects. This section concludes with consideration of work and pregnancy. This section will be of particular interest to those who manage departments and whose speakers at the recently attended Management of Health and Safety at Work Symposium should take due account (positively and actively) in their risk assessments.

The content of methodology will be of value to anyone considering or conducting medical research but will be of special interest to those in occupational medicine who are contemplating their MSc/MD dissertation, inspired on by the knowledge gained in the preceding chapters.

Indeed I would hope that Generalists and consultants in occupational medicine would find this book to be of value to them as an indispensable up-to-date source of definitive review. Hospital specialists and general practitioners should not feel excluded from its pages as they too will find that selective delving will provide a genuine source of information. Those who do not make a pain the opening hours will be pleased that pleasure.

J. J. W. STILES
Director of Health (Army)

Web's Guide to Medical Manuscripts in Britain
S. W. A. Royal Society of Medicine Services Ltd
1993 £19.00

This carefully bound book describes in compact form, but with sufficient detail to serve as a guide or overview, the subjects and workings of the background of the wide variety of medical collections open and physical positions in Great Britain which may be related by members of the public and professional in hospital libraries, opening hours, charges and availability. Much of the work is provided by an excellent map allowing one to appreciate at a glance the extent of collections available still for viewing

holidays or when a spare hour or two appear in a day away from home. This is a book to keep to hand but while its shape might not be to the taste of those who might desire from comfort and personal diagnosis to the old glass thermometer may be a great shame.

G. B. G. MATHIAS
Dean of Naval Medicine

Major Incident Medical Management and Support: The Practical Approach Tim Hodgkins and Karen Mowbray Jones, BMJ Publishing Group September 1993 Pp 224 UK £12.95 Overseas £15.00

The book is a manual for the Major Incident Medical Management and Support Course run by the Advanced Life Support Group based in Manchester but is also recommended as a stand alone text in its perfect. There are ten logical sections subdivided into 22 short chapters which are clearly printed with good use of boxes and line diagrams. Within the book is a comment and very well written, it is difficult to accurately state the major incidents in the context covered so easily boundaries. Much of the remaining management of a major incident lies in the Emergency Services rather than in medical personnel and this book makes abundantly clear the great role of such services in the scene. It is useful for medical and nursing personnel to understand the chain of command and techniques of communication adopted by the Emergency Services and in reality that these personnel are involved in the scene to under the direct control of the Senior Officers present and not an autonomous practice. Most of the chapters are extremely interesting to read but those general interest and information it is difficult to identify how a Medical Officer or Nurse should utilize this information in their clinical. Clearly anyone seriously involved with the management planning of a major incident or disaster will need to have read the book thoroughly but not all general readers will tend to utilize the large amount of information which it contains. Therefore the book can best be recommended for medical and hospital libraries for reference by personnel who may become directly involved in situations where large numbers of casualties might occur. These might for example include public an display, mass casualty meetings or major sporting events. Nevertheless, this book is highly enjoyable to read and much of the detail it contains is not readily available in

other publications and especially in such a clear and uncomplicated format.

M. RACH
Consultant in A&E Medicine
EMH Medical

Statistics at Square One, Ninth Edition.
T. D. V. Gurnason, Ed. and M. J. Campbell, Eds.
Publishing Group, January 1982. Pp 152. UK
£3.95. Overseas £5.10.

The original book was first published in 1976 and has been through several editions. This popular book describes elementary statistical methods supported by examples from medicine. The ninth edition has been thoroughly revised and extended by Michael Campbell.

The early chapters cover data display and the evaluation of complex tables and standard deviations. Chapter 3 defines populations and samples, mentions regression and describes variation between samples and provides the standard errors of a mean and a proportion. Statements of probability and confidence intervals are summarized in Chapter 4. The next five chapters are devoted to differences between two sample means, type I and type II errors, differences between two proportions or percentages, third tests, the chi squared test and Fisher's exact probability test for 2 by 2 tables. The Wilcoxon signed rank paired test and Mann Whitney test are described in Chapter 10 with examples. Chapter 11 discusses and illustrates correlation and regression methods. One of the new chapters, cross sectional analysis using the Kaplan Meier survival curve and logrank test. Chapter 12 (final chapter) is devoted to study design and choice of statistical test where the outcome and input variables are of the following types — nominal, categorical, ordinal, quantitative (discrete non normal, normal).

The Appendix includes tables relating to the Normal, χ^2 , the square distribution, and critical values for the Wilcoxon and Mann Whitney tests, and any table of random numbers.

This volume book includes methods specially adapted for clinicians and covers some two common nonparametric tests in short and full form, two plots, and grouped summary tests.

Chapters include many questions asked by students and also provide some answers for self testing.

R. J. PETHERBRIDGE
Head Statisticians
Institute of Naval Medicine

A Doctor at War Matthew Hall. Images Publishing, November 1980. Pp 226. £14.95.

This is the story of Colonel Martin Stafford, the most decorated doctor of World War Two, from his childhood through to the end of the war years. Witness from doctors' recollections and contemporary correspondence of a man facing one world war as incredible his more personal life and attitudes and courage in the face of an enemy more of conflict. The reader is taken with him to the Spanish Civil War then with the greatly flooded Spanish Air Resources and Russian beleaguered cities, where he is trapped when an ambulance is stopped unexpectedly. Here, as throughout the book, the author is in his thoughts from there to a personal experience to give atmospheric descriptions of people, events and underlying military and political strategies.

Sending us to establish links with Britain, Stafford is forced to travel from Finland to Leningrad and Odessa, then through Turkey, Syria, Lebanon and Palestine to Egypt where having been unemployed by the RAF, a offer of employment as a Station M.O. to join the R.A.M.C. which presented the challenge of war. Five weeks later he was landed with the 4th Field Medical Expeditionary Force sent to bolster the Greeks against attack from the Germans. His conduct during adventures sufficient for several citations earned him his first decoration, MBE. He went on to serve with distinction in the Desert War, Sicily (MC), Italy (two MC), Normandy and Holland (DMD) where he was captured and escaped. Reaching Durness some days after his liberation his organizational skills contributed much to the survival of many women.

A great story well told. A Doctor at War is highly recommended.

G. H. G. MILLMAN
Data of Naval Medicine

Tropical Associated Disease Ed. Gordon C. Cook. Royal College of Physicians of London, April 1980. Pp 176. UK. £3.95. Overseas £5.10.

Tropical associated disease is the broad umbrella of the numerous diseases common and tropical medicine specialists. A great history, however, should look for more than symptoms of infectious disease.

Tropical Associated Disease is a short text based on a Royal College of Physicians (London) symposium in June 1979 which explored not only the clinical aspects of infectious aetiology but

also the wider aspects of health and disease in the rapidly expanding field of stress medicine. Edited by the President of the Royal Society of Tropical Medicine and Hygiene, the author has to be congratulated. *Who's Who* is great and tropical medicine and their allied operations. As a result each chapter is interesting, varied and up to date. In listing the chapters on expected topics such as dengue, diphtheria and malaria, the chapters on Acute and the traveller. How best to cope with Air Lag, contributed by An Commission A M Medicine (RAF) and a fascinating insight into the 'Secrets' of our islands. Problems specific to stress, recreation and relaxation, are thoroughly important to military personnel, are highlighted and the economic aspects of disease in travellers is dealt with in a surprisingly stimulating fashion.

In summary, *Tropical-Associated Disease* is a concise, authoritative and readable book which is usually priced, it should become an essential text for all doctors who advise and treat travellers. Military doctors should not have been without it!

P. LLOYD-MOR (Major RMG)

Senior Registrar in Medicine and
Gastroenterology
RAF, Haver

Principles and Practice Server: Patient Controlled Analgesia: National Medical BMJ Publishing Group, July 1995. Pp 144. UK £10.95. Overseas £19.95

In 1991 a report from the Royal College of Surgeons and Anaesthetists on the standards of post-operative pain relief stated that there was much to be done in terms of attitude, education and techniques. Since then there has been considerable progress made, but five years on, there still remains an urgent need for better standards and methods of analgesia. One of the major areas of interest has been Patient Controlled Analgesia, which has been widely accepted by anaesthetists, nurses and patients.

This book attempts to cover the subject of patient controlled analgesia by a wide spectrum of people. It has succeeded in doing that but some comments are clearly relevant to some readers — few people tend to know the differences of the machines when study the basic principles will suffice. One resource speaks of moving in a series of stepped steps to ensure the safety, which will in all probability involve

the surgeon!

However, for many people the whole subject of patient controlled analgesia is still an unknown, and there is something for everyone in this handy read book, a copy of which would be useful on every surgical ward where PCA are used. The *Delphi Medical Services* are better than most, with an abundance of these machines — the last chapter is perhaps the most relevant to a lot of our colleagues, in the NHS. It is called *Observing Funding*.

A. TATES

Anaesthesia Department
Royal Hospital
Hull

Multi-User Student Software (CD ROM): James McMoran, Stewart McMoran, Ian Worsley, Graham Croxall for Ion Plus Service Young Man and Co. Ltd. Edinburgh, Edinburgh. Published September 1995. UK £34.75

Medical Notes: Individual Notes and Knowledge Systems is a very good attempt at the type of software which will continue to enrich the field of medical education at ever increasing speed. It was designed primarily as a test writing system, enabling the user to input new facts about a disease, or indeed upon new categories of disease into the database of conventional medical writing, but it also allows the user to customize the way he extracts the information by linking it as he sees fit. One screen tests based the format easy to use and continuous, of not slightly different, and it was felt that the basic, medical database was a bit too basic, especially on neoplasms, respiratory. The software is of low specification and will run on any 386 or higher IBM compatible PC, with Windows 3.1 or later operating system. Only 2MB RAM is required, however a dose of an, approx. 20MB of hard disk. Overall it is felt that the type of software is adequately the way about, but the particular package is not quite right yet.

B. C. C. TAMAYO

Medical Officer
HMS *Agamemnon* (Glebe)

Management of Neurological Disorders. Ed. C. M. White. BMJ Publishing Group, August 1995. Pp 702. UK £24.95. Overseas £27

This book provides a number of topical reviews, each written by an acknowledged authority.

The chapters deal successively with groups. Some

cover the major neurological conditions seen in general practice and by general physicians, including headache, epilepsy, stroke, meningitis, Parkinson's disease, dementia and multiple sclerosis. Each chapter concludes with a useful summary and includes helpful advice on criteria for referral.

In many ways, the most enlightening and best-written chapters are those that have helped to the generalist. There is a highly understandable explanation provided in neurological disease. There is a clear, easy view of head injury. The final three chapters, plus the notes of useful resources, discuss, of course, and the lines for neurology practice, and for the development of more comprehensive acute rehabilitation.

This is not a comprehensive text, book, and cannot replace other reference texts or clinical practice. As a manual of signs, symptoms to the generalist, this book succeeds admirably.

B J CLARK
Consultant Physician
Royal Hospital, Maida

The Legacy of War Poetry, Prose, Painting and Music D Berry and C Mackintosh. Royal Society of Medicine Press Ltd, 1990. 21.50.

This slim volume cleverly intertwines poetry and prose of the two World Wars, looking principally at the general theme of war, casualties, medical and nursing services, with notes on the poets and authors. The linking commentary can comfortably with the extracts, places them in context and offers points of interest. The few poems selected are reproduced in manuscript so that the advantage lies they lighten the pages and do not detract from the overall theme of the book. One cannot fail to be moved to read or recited in company at least some of the words quoted in this well presented work. Overall a delightful little book which will provide reference, and perhaps place appears even in perspective.

G H G MCMILLAN
Dean of Medical Studies

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Obituaries

Surgeon Captain J W Brown OBE MRD CMB
Retired after 37 years RN died 27 March 1996
in the age of 68. *Surgeon Commander R. E.*
Adelphi writes.



John William Brown was born in 1927 in a small seaside town, and at 14 went to sea, first being employed as a cadet. A Lieutenant, he qualified from British University in 1950 and joined the Royal Navy after radiology and ENT house jobs. He spent three and a half years as assistant surgeon, Consultant and then as a plastic surgeon, gaining considerable experience before joining the RN Air Medical Section as an instructor and Research and Trials Officer and then moved to the RAF Aeromedical Training Centre to coordinate the Phantom (F4) experience also served. He was then OBE in 1965, 44 years old, for three years before joining the staff of the RAF Institute of Aviation Medicine for trials and research. He gained a Master's degree in Engineering and returned to the Royal Navy as Staff Surgeon, Fleet Air Arm, although based at Seafield Park for several years, and Advisor to Aircrew Officers. He returned to the Royal Air Command as FRD of RMAF, Yorkton and

headed the aviation medicine centre as Command Medical Officer to FMAAC, back to RN as Director of Health (Navy) and Advisor to Organized Medics to their last eight months in the OBE as (Mentley) before returning to RN as FRD, for his final four years. He maintained a clinical staff by continued lecture projects.

John Willie was a large and enthusiastic officer who put his enormous effort into many tasks apart from winning his papers as FRD and transferred his interest to ergonomics, and this occupational medicine as he needed to deliver by.

A long night player in his youth he then took up swimming and teaching and was twice winner who sponsored his doctors. Equally keen at a cricketer he was a team rising leader at a ripe old age and was delighted to be able to play again after a cancer operation. He tended the square at Seafield Park for many years and was decorated when an incoming Captain's business resulted that an medical writer was needed.

John Willie was not prone to being angry and held strong opinions on most topics but was amiable in person. He could be a fierce taskmaster and demanded high standards from his subordinates but a means forced through the fire and generally cared for them. He was an extremely well respected OBE. His retirement was tragically short before he developed symptoms of an unexplained cancer. He is survived by his wife Betty, their two children and a grandson.

Surgeon Rear Admiral William Maxwell Birch OBE OBE died 26 October 1995 in his 72nd year.
His daughter, Frances, Adelphi writes.

Bill Birch died in his sleep in his own bed in his own home on 26 October 1995 at the age of nearly 72. By any standards he had had a full and interesting life.

He was born in St Vincent in the British West Indies on 11 November 1923. His father was a pioneer growing such crops as sugar and rice which cotton.

Both his parents died when he was comparatively young and in need of shipping was available after the First World War. He set off alone at the age of 15 or 16 with his mother as a seaman, from St Vincent via Canada to Liverpool and from Liverpool to London by train, arriving at his own's home and that he was away on holiday to Brighton. After contact in England he went to Guy's Hospital as a medical student.

He said that as the incomes of his father's Will were directed to pay off the income of his father's estate for his education and benefit during his education, he could have signed a proposed student bill for character in Doctor in the House. It would be said with satisfaction have accepted his other income. But of course he did not do that and he qualified as a doctor in 1917.

He mentioned that it was a charity and value as a recruiting feature at King's that made him think of joining the Navy. He said that the MHA at the time was actively discouraging doctors from joining the Navy because of the very low rates of pay but it was still attractive and he did at that time have some money of his own from his father's estate.

He joined the Navy in May 1917 and spent most of the next two years in the Americas and West Indian station in December 1919 he married Captain Josephine de la Motte when they made their home. She was the daughter of a retired master of the Indian Civil Service who lived in Hongkong outside Oxford. They had nine to a young lady who was two years earlier.

Although there was no doubt a lot of hard work, it was a wonderful situation for a young and socially man. Many interesting people, varied income and what his ship was, for example, in Myanmar, Borneo Island, many of the big boats that are now tourist ships were occupied by three masters who were only too pleased to entertain British Naval Officers. Three years in it from with a store of casualties to rescue and delight those who had been through the rest of his life.

In August 1917 he was appointed to R504 Plymouth as RMT Specialist. He stayed at the hospital until October 1919. Being promoted to Surgeon Commander in May 1920.

He was then appointed to R5045 Okefenokee on the South African Station. Much of the time was spent off Okefenokee in Sierra Leone dealing with illness and casualties sustained on the ships, that sort of work led to just round the Cape. He said that it was his most valuable professional experience because of the variety of cases that led to be dealt with and because the ship was anchored off shore, the surroundings were so much healthier than of the hospital had been at land.

After appointments as a specialist in surgery at R5048 Port Louis Agent and R5049 Singapore at R5048 Port Louis he was appointed in April 1925 to R5048 Compendium that was sent with other ships to join the US Navy in the Pacific.

The ship was particularly popular with the surgeons as it had much aboard. He was in Harbours it was still the almost brand new dropped and a small cheap clock that he had picked up with the hands fixed at the time of the explosion was one of his most often shown mementos.

The ship was busy representing recently returned prisoners of war of the Japanese and also carried wounded Japanese troops who were being repatriated to Japan.

After the war he had a number of ship-board jobs. He was promoted Surgeon Captain at the end of 1920 and Surgeon Major Admiral in April 1925. He then, later promotion, became appointed Medical Officer in Charge R5048 Chatham the last of that hospital and he was appointed as transfer to the National Health Service in January 1961.

From Chatham he went to R5048 Malta as Medical Officer in Charge. This was to be his last appointment. He retired from the Navy in April 1961.

He had become FRCS Edinburgh in 1911. He was made a Fellow of the Association of Surgeons of Great Britain in February 1927. He was awarded the CBE in the Birthday Honours in June 1949 and appointed as a serving Member of the Victorian Order of St John of Jerusalem. In April 1960 he was appointed Queen's Honorary Surgeon and was awarded the CB in the New Year Honours of 1962 and promoted as Commander Member of the Victorian Order of St John of Jerusalem.

On leaving the Navy at the age of nearly 60 he did not want the pressure of a consultancy in surgery but he did not want to be left just with his holidays.

He got a job with the Shaw Savill Line. In those days they had passenger ships that travelled round the world and it was therefore important that if a passenger or crew member should need surgery somewhere, any between Ports and Chatham, an experienced surgeon on the board.

In that you wonder what a range of operations who had spent his last three years in the Navy doing mostly when a man would know about the surgical problems that are might be a ship's doctor. I am happy to say that there was also on board a young doctor who acted as the consultant in return for a free passage. Often he was an Australian who had for example been doing postgraduate work in London and was going home or overseas, carrying out his term from from Australia to London. The consultant did all the night calls.

In my view, Bill was a quiet learner and after a very short time got quite conversant that he had all the skills of a GP, but even himself himself as a dress having taken criticism from them as Australian doctors who happened to be a passenger on the ship.

Bill established a routine whereby he would do two cruises round the world, was flown inland in September for being for the Christmas season, go sailing on St. Monica in the New Year and reappear, he thinks at the 10 and that, with the stories of what had happened on the cruises.

I have no doubt that Bill was a skilled and conscientious surgeon. I think he would have been an amazing doctor to work for. But I also have no doubt that apart from his medical skill he owed to the State Naval Land that he was progressive, amusing and a great man at a party — particularly of the company was young and energetic.

Bill's wife, Daphne, died in May 1982 having been ill for some time before that. She was survived by her two married daughters, Bridget and Frances, by three grandchildren and a great two granddaughters. Since two months before he died, he never knew it enough to attend the christening in London of his first grand grandchild.

Surgeon Captain Bernard Arthur Lewis DSC CBE was joined the Royal Navy as a Surgeon Lieutenant in 1938. Died at the age of 84 on 11 December 1982. Surgeon Royal Admiral T4-W. Molebury coast.

Ray Lewis, as he was affectionately known was born at the local environment of Inverness, Scotland, in 1898. After schooling at Cheltenham College he became a bank clerk qualifying there in 1922 and working on the weekends, department until late 1923. He had a short flirtation with the Merchant Navy before entering the RN and joined immediately by virtue of his appointment in 1928. On 10 June the Chief Surgeon from 1932 to 1938. He became one of the last Naval Medical Officers to serve with the Yangtze Patrol in Hankow, which fell victim to the Sun Japanese war the year that he left.

Some eight years before a brief appointment as 1948. Following the Surgeon was invited out and to spend time of it at sea. It was during his service as 1948. Chaperone in the Mediterranean that he was awarded the DSC, this being having been involved in the preparation and execution of the allied landings in Sicily and Italy and among other things, having been captured by an Italian submarine.

After the war he was quickly promoted to Surgeon Commander and began his career as a Medical Specialist, initially in Malta with a three year appointment in 1945. This, followed by a similar tour in India. A commission as PMO of HMS Indefatigable followed before his third hospital appointment, this time to Chatham from 1953 to 1958. After this spending two years in the Medical Department he was promoted to Surgeon Captain in 1954 before returning once more to Chatham.

His fourth and final hospital was RNS Plymouth, where he was Senior Surgeon to Medicine from 1961 until 1962, when he took up his last naval appointment as the Admiralty Medical Board. His retirement in 1968 was followed by the award of the CBE. He remained in the naval for some time thereafter as a Medical Advisor to the Fleet in London Authority.

He and his wife Mary, whom he married in 1939, are widely remembered by all who knew them for their unflinching kindness and generosity. Ray was of the old school and like all the best of that era, he was a gentleman.

Surgeon Captain (D) Clement Wharton Percy Royal Navy died on 28 January 1983 at the age of 82. Surgeon Commander SA E.J. Green (1903) coast.

Clem Percy died after a long illness, at the Royal Naval Hospital, Haslemere on 28 January 1983, at the age of 82. Born and educated at Abchurch, Wiltshire, he continued his dental studies at Birmingham Dental School in October 1927 qualifying in 1933.

Just prior to qualification, Clem made application to join the Dental Branch of the Royal Navy which he entered on a 4-year Short Service Commission in February 1935 at the Royal Naval Barracks, Portsmouth. Also known as HMS Plover, joining in the rank of Acting Surgeon Lieutenant (D) this was the beginning of a distinguished career, spanning 32 years. It was to take him across the world in both sea-going and shore appointments, as well as land posts of the Dental Corps.

After a year spent in various Fleet Air Arm establishments, Clem was promoted Surgeon Lieutenant (D) shortly after this, in April 1937, he was awarded to John Harris from his home town of Abchurch. The Navy of that time paid most regard to the manner of domestic married life and that this year he was appointed to be on the staff of Flag Officer, Second in Command, Fleet Air Station and Flag Officer

St. Casper Squadron. For the next eighteen months, Chris looked after the ships, conscripts of the cruiser *Newcastle* and *Northampton*, moored between the two armed forces. In early 1967 he married in the UK and to John Douglas the next September he transferred to the Permanent List of the Royal Navy by the end of his year.

After two years in HMS Collingwood, the training establishment in Portsmouth, during which time their first daughter Pamela was born, they were awarded with a posting to HMS St. Angelo the Naval Base establishment in Malta. This time John was able to accompany them. After a happy time and a half years on the Mediterranean Station, Chris and John returned once more to the UK, but now with two daughters, Angela having been born at the hospital in Malta.

His next appointment took Chris to HMS St. Harens, the boys' training establishment at Gosport, where he was promoted to Surgeon Lieutenant Commander (C) with two years seniority, due to a recent change in the Conditions of Service for RN Medical and Dental Officers. A further two appointment followed due to the natural career path. Again, a happy appointment, looking after over 2,000 men as well as those on board ships in company. This commitment was to take him once again to the Far East, during the time of the intervention with Vietnam, a conflict which in some respects both the ship and her crew.

Following promotion to Surgeon Commander (C) in June 1966, Chris returned yet again to the UK, this time as Fleet Medical Surgeon to the Submarine Fleet's, as the Staff of Flag Officer Submarine Force in HMS Dolphin (Gosport). Three years later he was back in the Far East, this time in HMS Xmas in Hong Kong and this time, once again accompanied by John, he put over two years which were amongst the happiest during Chris's time in the Navy.

Returning to HMS Porpoise, in Portsmouth and their home in Lee on Jubilee, Chris and John were again together until 1968 when Chris was appointed as Staff Dental Surgeon to Flag Officer Scotland and Northern Ireland at HMS Conference in Rosyth. John being unable to follow him due to his own medical commitments whilst on this appointment, he was promoted Surgeon Captain (C) in June 1970.

Chris's appointment as a senior officer took him finally to Command Dental Surgeon to Flag Officer Naval Air Command, in HMS Dauntless close to his home in Lee and later to HMS

Porpoise, the Royal Naval Air Station at Yeoville, Somerset.

Thereon he was appointed in 1980 to HMS Nelson in Portsmouth and then to his final appointment as Fleet Dental Surgeon in Commander in Chief, Fleet in Portsmouth Harbour. In February 1983 he was promoted by his appointment to as Honorary Dental Surgeon to Her Majesty the Queen. He retired from the Royal Navy in December of the same year.

Beyond his linked association with the Naval Service, Chris was known and held in great affection by his many friends both within and outside the Service, for his responsible Welsh upbringing and a delightful sense of humour which brought light and laughter into any company.

Due to Chris, to his Celtic origin, he was an accomplished musician and chorister, creating many a Night Choir and continuing to contribute to the choir at the cathedral church in HMS Dauntless despite his illness and with steady belief in death. Chris was also an enthusiastic and accomplished amateur swimmer taking part in many plays, RN Diving Festival and other's cannot picture during his RN service.

He was also a great Francophile with a love of French women and he and John travelled in France many times during his retirement. As a last Chris was unwell and his illness recognised. This meant his many happy memories of being entertained by Chris and John, both at home in the UK and in Hong Kong.

Chris is survived by his wife of over thirty years, John, and their two daughters, Pamela and Angela. To them and friends sympathetically from their many many friends. At his funeral on Monday 5 February 1996, at St Luke's Church in the Royal Naval Hospital, Haslemere, a choir friend told the congregation: He was a lovely man! This is how his family and many friends will remember him.

Wardmaster Lieutenant Charles H. Bantick, Royal Navy died 26 December 1993 in Australia in the age of 88. A Maritime Service was held at St Nicholas Church, HMS Endeavour on 16 January 1996. His daughter Joyce Bantick Archer wrote:

Born in Bromley, Yorkshire on 11 July 1907, the second born of my father's life was the Royal Navy. The first was my mother, Kathleen, to whom he was married for 63 years. He wanted to be a policeman and was a cadetship in Queen Elizabeth Grammar School in Wakefield where

came from the village of Ryhall where he lived. However there was no money to continue his education and he eventually went to work on the coal mine.

In 1922 he joined the Navy at HMS Drake in Devonport — it would be his home base for the next 30 years — and was assigned to the Royal Naval Hospital at Stonehouse as a Sick Berth Attendant. In 1927 he was assigned to the destroyer tender HMS Falconer for a three year China commission.

He returned to Plymouth in 1932 and served there until 1935. He then spent the next year on a destroyer HMS Plymouth in the North Sea, back again in Drake and the Royal Naval Hospital. He was now a Petty Officer SBA. He was transferred from Stonehouse to HMS Falconer when being brought into the hospital from the straiteners at Chatham. He put up one of his legs to help with the wounded sailors damaged by bombs. On Christmas Day 1940, he reported for duty aboard the cruiser HMS Abdiel. His area of duty was considered the most dangerous at that time, but we later learned he was in the Mediterranean. This Abdiel was torpedoed and sank off the coast of Africa on December 1942. My father was in the water for 12 hours before being rescued.

Returning again to HMS Drake for a year he was then assigned to Devonport in Scotland serving there for almost a year before returning to Drake as he progressed to Chief Petty Officer. During his time just in Drake, he was temporarily assigned to LST 653 as the medical attendant from the hospital at Rosneath on 10 Dec 44. This followed a year of duty in the Pacific theatre aboard HMS Roppy Spruance. Back at HMS Drake from 1945 to 1949 he was then assigned to HMS Hunter in Hong Kong for a year before being promoted Warrant Wrennester. He retired in 1955 as Wrennester Lieutenant. After retirement he served as a civilian in the Dental office at RN Hospital Stonehouse.

He was awarded the RFAH Star for Active Star, the British Service War Medal. Charles was a devoted churchman, regularly attending services at RFAH Drake and at the Royal Naval Hospital and as a member of St Mary's Church in Linton. He loved cricket and rugby playing on the Mary home team. He loved his Sunday best his house. He loved my mother, me, dogs, singing hymns and working in his garden. *He was of all the loved the Navy.*

Lieutenant Arnold Hughes Royal Navy died 21 February 1986 at the age of 62.

It is with regret that we report the sad and premature death of Arnold Hughes, who served in the Royal Navy as the rank of Lieutenant Commander (Medical Service) until November 1994.

Arnold Hughes was born and educated in Kilsyth, South Wales. He joined the Royal Navy as a Probationary Medical Technician, in 1950 and qualified as an Environmental Health Officer in 1959.

He achieved his early start in the environmental and was promoted Sub-Lieutenant on the Supplementary List in April 1963 subsequently transferring to the Special Duties List in 1967. After successfully leading the Plymouth Area Naval Environmental Health Team, he moved back to Stonehouse Naval Base in 1965 to become the Command Environmental Health and Safety Officer, a post which he held until October 1990. He was then appointed to the Directorate of Naval Logistics Plans to complete a revision of the organization of Health and Safety for the Royal Navy. Promoted to Lieutenant Commander in 1994, he was appointed to the staff of the Medical Director General (Navy) in 1992, with his last appointment being in the staff of Second Sea Lord/Commander in Chief Naval Home Command in 1994.

As the Naval Naval Home Command Health Officer Arnold was actively involved in the recruiting, training and professional development of Naval EHOs and during this time he formed close links with Local Authority Environmental Health Departments in the Hampshire area and the training department in Chichester House. He was a keen and active member of the Navy and RAN Chief Environmental Health Officers Group.

Arnold's forte was his ability to link environmental health and his encyclopaedic knowledge of legislation was well known among his colleagues. A knowledgeable and encouraging lecturer on Health and Safety, his presentations were well received by a wide variety of audiences and there is no doubt that this ability to communicate with a positive impact on all those with whom he came into contact. An active Ley 2 Register Officer and an active supporter of the Welsh national team. As well as particularly remembered for his outgoing, friendly and unselfish personality, despite his long and good health in his later years.

His condition deteriorated rapidly in early February and he was admitted to the Prince

Philip Hospital, Lincoln with bipolar and renal failure on 15 February. Died on 21 February 1995 aged 42.

The transition service was held at the Information Communications Institute on 26 February 1996. Representatives from the Royal Naval Medical Service attended and had a wreath. We extend our sympathy to his family on their sad loss.

Dr Charles (Tim) Houghton joined the Civilian Medical Practitioner at HMS Collingwood, died on 9 December 1995 after a long illness. Tim must have been one of the first true 'purple' as he served in all three halves of the Armed Forces.

Tim started in his planet, Tim as born in India in 1931 but shortly afterwards, the family returned to Godalminghouse in England. His education at Chisum and Chislehurst was followed by two years National Service, a commission in the Royal Engineers and a posting to Jordan. On demobilisation, he studied medicine at Cambridge (Class) and St Thomas's Hospital, qualifying in 1956. While a medical student, Tim fought the 116 a car wreck, although a bad scared life in a Redcross Morgue, was more than a matter. He and his brother took over Wales on a camping holiday. Killed as food as an air member they drove along with ambulances. Tim as later replaced by a 1914 Award. 7 a delighted time out but it had the disadvantages of having to go up both backwards.

Tim's pre-qualification house appointments were at St Mary's Hospital in Portsmouth where (Pudon) where he later married, was during after further hospital posts in Southampton General and Torbay Hospitals. In 1961 came years in General Practice before joining the Royal Navy on a short Casualty Commission. He was posted to RNM (Sigs) Malta where he worked for his Geoffrey Milton Thompson. Later he looked back on this time as the highlight of his career.

In the end of the three years, Tim decided not to attend his commission. Instead he joined the Royal Air Force and moved with his wife and baby son to Berlin where he was stationed at R.A.F. Gatow. He relished the cultural opportunities of that city on both sides of the iron curtain.

In 1969 Tim was offered a job in Basel by Basle, where he became involved in the production of drugs used in the treatment of cancer. The family spent four happy years in Switzerland and went 1966 to develop their interest in Alpine flowers. Then they decided to work home so that their son could have an English education. Based in Leamington, Tim worked for Basle to study the same field as he had been doing for Basle. The first three months however were spent at Boston, Massachusetts, studying particular aspects of the structure of lay fibre.

When in 1970 Tim had come to the conclusion that he really preferred people to drugs, he applied for a post as CMO at HMS Collingwood. He greatly enjoyed the work and found life at Plymouth although, on account of the distance from his home, Pudon was unable to be part of it. Tim cautioned them both. But a general infection was the discovery in 1972 that Tim had renal cancer. An operation was performed in December of that year and he was back at work, at less than two months. For the next two years Tim led a completely normal life. But towards the end of 1973 he was found to have metastases and, in the following year, all health forced him to retire.

During this extraordinarily varied career, in which Tim was employed by the National Health Service, all three Armed Services, the pharmaceutical industry and the Civil Service, he was strongly supported by his wife Pudon. In his last illness she nursed him devotedly. She and their son Oliver survive him.

We have learned of the recent death at the age of 83 of Surgeon-Commander George Clifford Benge who joined the Royal Navy in January 1952 and retired in 1967 after 35 years service of Surgeon-Commander Edmund Sidney Elliott DSO, on 4 October 1962. Surgeon-Commander Victor Pursons RRC RNVN on 22 October 1961. The group-Commander W. Collins on 26 November 1961 and Temporary Commandant Warminster Ernest Arthur Bogg on 19 December 1965. Our sympathy is extended to the relatives and friends of the above officers, any personal communications will be welcomed by the Editor.

Service News

Joint Service Defence College Prizewinner



Surgeon Commander P J Balluff's performance as one of our Services' Defence College Course 1956-1960 has won The SEMA Group Prize - a name of the art notebook computer with a full suite of office software. The award is made to the student who has scored the highest 'best of the best' in all around professional excellence: high quality written work, exemplary personal commitment, innovative spirit, outstanding past service achievements, and a potential to add exceptional advance to the service organisation. The presentation was made on 7 March 1998 by Mr Peter Jenkins, Marketing Director of the Systems Division of SEMA Group UK Ltd.

Sun sets on Royal Naval Hospital Haslemere

Admiral Sir Michael Bence, Second Sea Lord and Commander in Chief Naval Home Command and Surgeon Commodore I. L. Jenkins, RRC, Royal Naval Hospital Haslemere took the salute at a Sun Setting and Sunset Ceremony in the hospital on 1 April 1998 to mark its transfer to the Defence Secondary Care Agency as The Royal Hospital, Haslemere.

Commander in Chief's Commendation

Surgeon Lieutenant Rory Rickard Royal Navy has been awarded a Commendation by Commander in Chief Fleet. This reads:

In July 1995 HMS Southampton was directed to the coast of Nicaragua, on the Caribbean, to stand by to render assistance to the 11 300 inhabitants in danger from imminent volcanic eruption. The ship landed personnel to assist in planning for disaster relief and possible volcanic evacuation.

Surgeon Lieutenant Rickard was tasked at an early stage in the process to conduct a reconnaissance of medical conditions and facilities and start planning for a staged evacuation of the island and return to the shipyard only two miles to the north of the island. One of his most important contributions at the early stages of the operation was to liaise with the local medical authorities and incorporate them to work together to prepare and set up emergency facilities in the early days and to make arrangements for sufficient emergency medical stores to be provided from various Service and charitable sources. Rickard quickly earned the confidence of the local

Government administration to the extent that it was often to him that they turned for advice and encouragement. He was regularly obliged to coordinate medical requests of the island's facilities by the medical doctors. The negotiations and liaison involved in the medical preparations were done very well yet throughout, Rickard displayed much diplomacy and a maturity beyond his years.

On the same quickly after a road traffic accident in which one local man died, he had limited medical resources and prompt medical actions, which included self administered resuscitation, successfully saved the life of the other victim involved and limited injuries sustained by a young Royal Marine.

Surgeon Lieutenant Rickard's success in coordinating effective medical facilities, the detailed planning for the evacuation of the island, achieving a good medical emergency plan was available and his handling of the course of a bad road traffic accident were all on the highest traditions of the medical branch of the Service.

Medical Mess Dinner

Honorary Committee Contributors to the Royal Navy and members of the Royal Naval Clinical Research Office Committee were among the guests at a **Medical Dinner** given by Surgeon Rear Admiral A. Clegg (RAN Medical Director General (Naval)), and senior officers of the Royal

Naval Medical Service and Queen Elizabeth's Royal Naval Nursing Service at HMS Dolphin on 10 May 1998. Surgeon Rear Admiral Clegg proposed the toast. Our Guests and Presiding C.C. Michel responded. Surgeon-Commander G. H. G. McMillan presided.

Royal Navy Medical Club

The annual Cocktail Party of the Royal Navy Medical Club will be held at the Institute of Naval Medicine on 26 June 1998. The annual Naval Ball Dinner will be held at the Princess Hull Royal Naval College Greenwich on 12 September 1998. This may be the last time this event is available to

the Club. Details of these functions and membership of the Club in very moderate full subscriptions rates may be obtained from the Honorary Secretary, Surgeon-Commander C.J.C. McArthur Royal Navy, Principal Medical Officer, HMS Kewar, Naval Medical Address, HMS 395.

Commander British Forces Gibraltar's Commendation



Medical Assistant (St-Richard) Crump, Queen Alexandra's Royal Naval Nursing Service of the Royal Naval Hospital Gibraltar has received the Commendation of Commander British Forces Gibraltar Major General B J Pratt CBE.

On 15 October 1999 MAJ(C) Crump attended a road traffic accident at Queensway Gibraltar as part of the duties of the RN Hospital Ambulance. There were three local vehicles involved and two of whom were trapped in their car and had a narrow escape from being injured. MAJ(C) Crump conducted a full assessment and applied First Aid regardless of her own safety and whilst under great pressure from the rescue services. She then pointed a doctor onto using all available resources and reported one patient related the car was not apart to permit a difficult extraction which she led. Throughout a long and difficult operation MAJ(C) Crump worked doggedly to her task, remained the longest on to supervise responsibility to others, and displayed a high degree of care and compassion. Thankfully and successfully she performed her job in the most difficult of circumstances and with a professional regard for the preservation of life.

Erroll Eldridge Prizewinners

Annually, ten medical officers were awarded an Erroll Eldridge Prize for 1997. They were Surgeon Captain M A O'Connell and Surgeon Commanders R J Clark, C J Davis, W M McQuinn and R R Taylor, and Surgeon Lieutenant Commander P M Kemp (see below). The Medical Director General (Naval) Surgeon Rear Admiral A Craig OBE and Mrs Craig presented plaques to prize winners in a fitting luncheon given in the Admiral Craig's Restaurant.



Erroll Eldridge Prize Winners. Seated in front row: all five prize Surgeon Commanders R J Clark, C J Davis, W M McQuinn and R R Taylor, and Surgeon Lieutenant Commander P M Kemp (see below). Standing in back row: Surgeon Captain M A O'Connell, Surgeon Rear Admiral A Craig and Mrs Craig.

New Director Medical Reserves



Surgeon Captain John Maxwell RNVR was appointed Director Medical Reserves in October 1995. A Naval and open University graduate, he is a Principal and Tutor in General Practice at Whitstable Kent and Clinical Assistant in Dermatology at Kent and Christchurch Hospital. Surgeon Captain Maxwell was commissioned in the Royal Naval Reserve in 1975 and in 1977 joined HMS Roderic Portsmouth where he has served as Assistant Officer and Commanding Officer. He has had wide experience with the Royal Navy and in civilian life both at home and abroad, including a spell of one year full time recall.

He is a BMA qualified General Surgeon, has long been a supporter of the RNVR, serving as a crew member of the boat Atlantis II (Leamington 1991-93) and currently is training for the Reserve Life Saving Medal. He is President of US Exiles and the Whitstable Branch of the Royal Naval Association.

Surgeon Captain Maxwell was appointed Queen's Birthday Physician on 1 February 1996.

Professional accolade

John Peter McKean, Principal Pharmacist at the Royal Naval Hospital, Haslem, has been appointed a Fellow of the Royal Pharmaceutical Society of Great Britain. This is a particular accolade awarded exceptionally by the pharmaceutical profession.

State of the Art Intensive Care Unit

The newly refurbished Intensive Care Unit was opened on 4 March 1986 by Surgeon Vice Admiral A. Bayrell CBE, Surgeon General. The Unit became fully operational on 14 March following a period of staff training and has been kept busy. It has met all demands placed on it and staff and very happy with the new concept. A full report will appear in the next edition of this journal.

The Haslar Mobile

With the ever increasing demand in treating the intensive care and high dependency patient coupled with the increasing range of tests required at the bedside there has been over the past years a growing requirement to have a mobile superunit by every bed in order to have at hand those everything some required for the intensive care of the patient.

Medical items previously available for the purpose have really been ad-hoc that required large machines, a mobile pool storage means, all metal, built on casters and with very limited storage space and expensive to purchase.

When designing the new Intensive Care Unit detailed attention was given to the bed area and bedside storage options required for both the patient and nursing staff. It was decided to approach Derek Norrish who had been contracted to install all waste systems and cupboard runs throughout the ward area, to extend in the production of a specialized bedside unit.

A design was evolved on paper for a mobile unit that would be capable of supporting the nursing staff through the fast turnover of patient admission/discharge, following resuscitation, commencing



to support both patients and staff on a daily basis.

The great advantage of a central delivery system with three drawers of varying depths. Each drawer has a different material to monitor working surface area of syringes, rubber ampoules, etc. On either side of the unit are two cupboards, each divided into two levels. The right hand side top holds all medical linen, towels, refuse bags and prepared waste, whilst the lower unit is shared with IV bottles.

The lower left hand unit holds bed linen, the upper unit being used to hold the patient's safety requisites. The drawer had cupboards into an all purpose shelf from a heavy duty compressed function. The lower doors have specialized hard wearing hinges, whilst the upper cupboards have an up and shut door that slides into the unit when closed. The drawers units and cupboards have rubber mounted wheels.

The work surface is stainless, sprayed towards the back, and produced from a hard wearing, resin made polymer substance called caradurite. It is both easy to clean and resistant. Any marks made on it may be removed by rubbing with a dry cloth pad.

The rest of the unit is backed with a shelf for

holding items. It also acts as a bed divider. A drip stand unit may be added in order to allow for IV preparation, as may a small holder for the patient's gown. The unit is mounted on casters for ease of movement and when not in use can be moved away thereby maximizing space in other bed areas.

All eight units are worked in exactly the same way thereby creating uniformity of storage for staff.

Planning and production took three months, coupled with factory visits to sight the unit and discuss changes were required. Interest has already been shown by other hospitals in the unit and Caste, Newcastle intend to add the unit to their catalogue under the name Hander Model.

Our thanks go to Steve Vager and all at Newcastle for their help and interest in bringing this unit to life.

Dr Colin John Grieve,

Nursing Officer in Charge Intensive Care Unit
Royal Hospital Harker

CPONM Eric Newbark

Academic Department Manager

Royal Hospital Harker

Channel Relay Swim

Congratulations to LNN A L Sears, a member of the Royal Navy Team which completed a Cross Channel Relay Swim on 2 September 1985. She reports:

We also decided ourselves, as a team, to participate in HMCS Vancouver in July 1984 — the Navy swimming team wanted to attempt a Channel relay swim the following year. Quite a number of swimmers volunteered but, strangely, as a cold war May morning the following year there were only a few of us finishing the Channel. This usually took place in HMCS Cyprus and was usually named Cold Water Acclimatization, cold being the opposite word. This work of training consisted of endurance training in the pool, for two hours twice a day and two ice swims, a day in Port of Harbours. One aim was to decrease the time spent on the pool and increase the time spent on the ice. The ice temperature was 40 °F and we could only wear swimming caps — we both cannot be made of nylon! and pants or our bodies. The goal was to prevent

shaking from the ice, not to resist it. I found that I could tolerate the ice as a progression, and I actually enjoyed the swimming. It gives the swimmer a sense of achievement that swimming up and down in a pool.

After Portland we all did our own training and met again at the first serious Long Distance Championships held at Lake Bala, Wales, in July. I managed to come fourth overall in the 1.5 mile swim. The temperature was slightly warmer than Portland (51 °F) and I did not get bogged down by the cold, mainly at the lake. As a result the final selection of the team was made and consisted of Lieutenant Brian, Personnel CPONM's Dave Barry, POA/NA Chris, Lt. LPT Dick Thomas and myself. We were the first swim team from the Services to attempt the Channel Relay swim.

We arrived at RAF Manston early morning on 24 August, hoping to make our Channel attempt on Saturday 2 September, weather and tide permitting. We spent the next couple of days off Ramsgate and Dover, as quite bad weather. Our medical cover, Lieutenant Peter Quashnock and reserve PMRT Paul Barrett, also joined us and participated in some of the sea swims, raising themselves rather than swimming tanks.

Fortunately we were able to attempt the swim on 2 September. We left RAF Manston at 0500 and arrived at Dover to board the boat, *Argonaut Blue* at 0530. The swim began from Shakespeare Beach at 0600 and, being dark, the first swimmer, Steve Barry, repeated a 4.5 stone light attached to his wrist, much to our surprise. We were very grateful to Lieutenant Peter for supplying us with two submersible lights, which were, very much appreciated. My first swim was not channel and in the choppy time. It was a very odd experience, swimming so close to red markers, some of which shone and beamed. We all went for our four laps and one later one from one marker to another was closely monitored by our official from the Channel Swimming Association.

We were stopped in land on a buoy was called *Cap Gris Nez*, which indicates the site of the swim by about one hour. However, about six miles from there we received a storm warning. The boat crew were confident that we would reach the French coast safely but in order to do so, we had to alter course and head in a safer area, which would add time. By this time, we were informed that several other Channel attempts taking place, had been aborted and we were the only ones continuing. The swim was quick to arrive and we were

swim in a three 5, with steady lightning and rain.

Swim on the boat in three conditions was not very miserable and it was a real relief to get back in the sun for my final swim. It would have been better off with a surf board due to the state of the sea. I could see the beach on which I was swimming in land but it never seemed to get any closer. I had a possible encounter with a French gullfish during the swim, apparently we were lucky there wasn't more, as I had been told that there were large clusters of them on the coast. One of the swimmers swam the last 180m on the beach with me, as it was contrary to the rules for any other swim marked so much in the same time. It was a wonderful feeling to land in the beach and know we had completed the swim. Our final time was 10 hours 59 minutes, and in finishing the swim we raised approximately £100 for the British Wheelchair Sports Foundation, our chosen charity.

The time spent in the water really made me appreciate what this channel swimmers must endure and I have very great admiration for their undertaking. We all travelled back to Dover and felt very tired in our submersibles and it was very strange how the feeling of sea sickness disappeared when we ate large quantities of bangers and mash from the local *McDonalds*. Despite swimming in rainy, choppy, standing on dry land and repeating instructions before we celebrated in Ramsgate, we all managed to quickly eat and wash without incident three days after.

It was then that we decided we would like to do the swim again in 1999 and if possible to swim there, not back. From my own notes we do this and we have already begun training and are hoping to make another attempt in June 1998.

Naval Physiotherapists at CTCRM, Lymington

During the period 12-14 January 1996, some Naval physiotherapists, attended a course conducted by the Langer Biomechanics Group. The course, with both theoretical and practical elements, was designed to give our members an understanding of musculoskeletal assessment, analysis of postures and an insight into spinal and orthotic construction. The course lecturer was Mr Paul Barrett of the Langer Group.

Based at CTCRM Lymington and arranged by CPORTH's Andy Haines, the course was also attended by CQMTs M Cowley and A Travers, CPORTH's S Doolberry, D Colby, P Asherson, A Jones and D Doolley, and PMRT P Asherson. Supporter Commander John Goffe, PMO CTCRM and Lieutenant Mike Finlay RANZ, were also in attendance.

ROYAL NAVAL MEDICAL AND DENTAL OFFICERS APPOINTMENTS

As Commandant of the Defence Medical College and Defence Medical Post-graduate
Units to date 23 April 1994

Surgeon Commander J. E. Jackson OBE

As Director of Medical Organisation
in the rank of Surgeon Commander
to date 3 May 1994

M. E. Bicknell

As Medical Officer in Charge, Institute of Naval Medicine in the rank of Surgeon Commander to date 8 May 1994, as Dean of Naval Medicine in consultation and Consultant Advisor on Occupational Medicine to Medical Director General (Naval)
to date 3 May 1994

C. B. G. McMillan

As Advisor to General Practice to Medical Director General (Naval) to date 3 October 1994

Surgeon Captain P. F. R. Tolley

As Consultant Advisor in Accident and Emergency Medicine to Medical Director General (Naval) to date 3 December 1993
Surgeon Commander C. J. Cullen

As Professor of Naval Occupational Medicine
Surgeon Commander F. J. Raftery

PROMOTIONS

To Surgeon Lieutenant Commander
P. D. Edwards OBE OBE OBE OBE OBE

To Surgeon Lieutenant Commander (D)
A. A. Roberts J. Branson

To Surgeon Lieutenant
S. T. W. Low GOC

CONSULTANTS, SENIOR SPECIALISERS AND SPECIALISERS

The following professional appointments are announced:

Consultants

Generalists

Surgeon Commander D. A. Hill

Surgeon Lieutenant Commander R. C. Scott

Orthopaedic Surgeons

Surgeon Commander S. L. Holliman

Radiology

Surgeon Lieutenant Commander J. M. Perry

HIGHER QUALIFICATIONS

Surgeon Captain B. J. W. Rogers — MD
Surgeon Commander G. M. P. Woodford —
MD

Surgeon Lieutenant Commander P. C. Young
— FRCR

Surgeon Lieutenant Commander M. B. Turner
— MRCP

Surgeon Lieutenant Commander D. J. A. Price
— MRCP

Surgeon Lieutenant R. Miles — MRCP

ATTAINMENT OF SENIOR DOCTORS

Surgeon Lieutenant S. J. Turner has passed Part
II FRCR.

Surgeon Lieutenant A. J. Mellor has passed Part
II FRACS I.

Surgeon Lieutenant Commander R. M. McNeil
Levi has passed Part I FRCR.

NEW ENTRIES

Surgeon Sub Lieutenant M. P. Martin

PLACED ON EMERGENCY LIST

Surgeon Lieutenant S. P. Powell D. G. Simpson
R. C. Price

RELEASED ON COMPLETION OF SHORT-COURSE COMMISSION

Surgeon Lieutenant Commander (D)
S. A. Pagnon

RETIREMENTS

Surgeon Commander B. Richard OBE
Surgeon Captain J. D. Buchanan M. P. Leonard

Surgeon Captain (D) R. S. Rumbly

Surgeon Commanders C. M. James

P. B. Weywood M. Rook

Surgeon Commanders (D) D. C. C. Alexander

T. P. Rens E. C. Longson R. J. Griffiths

Surgeon Lieutenant Commander S. A. Johnson

MEDICAL SERVICES

NR AREA

CCNY (D) Medical Fellow has been awarded the
 Degree of Bachelor of Science of the Open University

RETIREMENTS

Lieutenant Commander S. Moss M. A. Wignall
Lieutenant L. S. Davies

**QUEEN ALEXANDRA'S
ROYAL NAVAL NURSING
SERVICE**

APPOINTMENTS AND PROMOTIONS

To Lieutenant
R G Piper

**TRANSFER TO FULL CAREER
COMMISSION**

Lieutenant Commander J M O'Brien A&BC

**TRANSFER TO INTERIM CAREER
COMMISSION**

Lieutenant C L McLaughlin

**TRANSFER TO SHORT-TERM SHORT
CAREER COMMISSION**

Lieutenant T W Aldworth

**RELEASED ON COMPLETION OF
SHORT CAREER COMMISSION**

Lieutenants L Kyte, M E Pivoda, P R Lu,
J M Houston, J E W Kelly, A Latham,
G J Powering, A Graham, J M Latham,
M Dackham

RETIREMENTS

Commander G M Collins A&BC
Lieutenant Commanders P A Hughes,
S A Park A&BC, J R Lewis, S A Latham
Lieutenants J J Collins A&BC, G B Williams,
D R Hiley, S N G Bisset

ROYAL NAVAL RESERVE

NEW ENTRY

Probationary Surgeon Lieutenant C J Gervis
— *Ensign*

RESIGNATIONS

Surgeon Lieutenant Commander A A R Monteys
— *Eng Adm*
Surgeon Lieutenant Commander S P L. Toms
— *President*

RETIREMENTS

Surgeon Lieutenant Commander C F Quayle
— *Northwood*
Surgeon Lieutenant Commander
N D J Dobbythorn — *Forward*
Surgeon Lieutenant Commander M W English
— *Forward*

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Journal

of the
**Royal
Naval
Medical
Service**

IN THIS ISSUE:

Fleet and RFA
Updates

Gulf War Veterans'
Health Problems

A view from
Whitchell

Acid related GI
disorders



INSTITUTE OF NAVAL
MEDICINE



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Health Book Corner

*For a price guide, The Editor, *Journal of the Royal Naval Medical Service*, will refer you*



Sick Berth Petty Officer's Efficiency Medal

In April 1879 a royal Naval Navy captain expressed a wish to donate approximately £100 for the purpose of striking a medal to be awarded to the member of the Sick Berth Staff who had shown the greatest skill and efficiency during the previous year. Although naturally a simple request, their Lordships of the Admiralty, the Master of the Royal Navy, the Queen's Viceroy and the Admiralty Board were all consulted. By August 1908 the announcement of the Sick Berth Forward's Efficiency Medal had been published in Admiralty Monthly Orders and all reports of the award received with the exception of the design. Models of the proposed design were sent to the Royal Navy on July 1908 but in August of that year the title 'Sick Berth Forward' was changed to Sick Berth Petty Officer. These late changes in uniform design inspired that new medals be obtained. The first medal was awarded some two years after the inscription first wrote in the Admiralty Awards Book book, stuck each year with the exception of two years in the 1930s. The medal is now worn.

Chief Petty Officer Medical Assistant A. Williams, now in the Institute of Naval Medicine, was awarded the 1949 medal in recognition of his service as a Petty Officer Medical Assistant onboard HMS *Amphibious*. Admiral Sir Michael Boyce, James Don Lord and Commander in Chief Naval Home Command presented the medal before Royal Navy and civilian colleagues during his visit to the Institute, on 5 July 1999.

Editorial

Readers will recall the opinion survey conducted some two years ago on improving what they wished to read in the Journal. This was an interesting exercise, which indicated that, while continuing to offer opportunities for the publication of reviews and reports of good medical research, especially of a medical or at least military flavour, the Journal should seek to focus more on news, opinion and history. Your letters suggest that the right balance is now being struck and I thank all the contributors, and those who have referred papers for their assistance and support.

I am delighted to be bringing to the Defining Point editorial board, and perhaps for the first time in the public domain, a comprehensive report from the Defence Medical Services there to set on progress in managing Gulf Veterans' conditions for their health and describing the Surgeon General's responses for future research. This paper is coupled with a research report by Group Captain Cohen from the Medical Assessment Programme giving an indication of the frequency of complaints which veterans associate with the Gulf War. The Ministry of Defence has drawn enough criticism over its action on apparent lack of action in this issue. Perhaps these papers will allow more informed judgements to be made.

From time to time medical officers are accused of being somewhat paradoxical of failing to appreciate the bigger picture. It can be difficult to form an appropriately more global view of the Royal Navy, an achievement and responsibility. To that end, I am indebted to Commander Chris Stanford, Director of Naval Staff Duties, for so ably accepting the challenge. I set him to share

his personal, and very informed, view from the Officer with us. His opinion should before me lend confidence in the medical services while drawn out their own way and shape, and plans for improvements in many medical areas more to follow.

One of the respondents to the opinion survey was Surgeon Commander Richard Hunt, now Professor of Gerontology at the McMaster University in Hamilton, Ontario. Richard had no issues, and that former member of the RMAF might be coming to just about that as evidence for 'lost to service' and retired doctors was spending across the Atlantic and the resulting impact placed in presented in his column. Another celebrity author is Professor Sir Cyril Clarke, former Professor of Medicine at the University of Liverpool and a former President of the Royal College of Physicians. He had in the following paper, his, was from colleagues, retired Surgeon Mr J. Whelan, add to discussion of Naval hospitals in far flung places during WWII with their treatment of both cases and personnel in RNH Home Bay Sydney. Another Professor Clarke then describes the doctors afflicted by the POWs from Japanese camps placed in his, civil and subject his experiences in three of other doctors charged with the care of released POWs, in other doctors. Completing the History section,

it is a delight to have a contribution from a former member of QARMNS and I hope that others will follow the example of Mrs Phillips.

Finally, to keep the Journal staying modest, are asked to hold content material for publication and to encourage business associated to the our well targeted advertising space — several a line space in the column cry out for short attention and professional material!

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Member of the Association of Service Newspapers

Updates

The picture begins to emerge

Another piece of the picture fell into place when Ministerial approval was given to the proposals for the future use of the HMS Dolphin site. The proposed changes, which situate the subject of public consultation, would mean HMS Dolphin coming to be a purely Naval establishment with transfer of volunteer training to HMS Raleigh location of the two elements of the Maritime Warfare Centre to HMS Dryad and relocation of the Royal Defence Medical College, currently situated at Millbank, to the Dolphin site with the newly created Army third-rate field hospital (33 Field Hospital) next to the Armed Forces main hospital in Haver. These arrangements will improve the standing of the Royal Hospital Haver, as a centre of military medical excellence and strengthen land and regional training links.

Meanwhile, implementation of the expansion programme at the last customer with completion of work on P2 and P3 works, good progress on the Home and Plasma Unit and the Day Surgery Unit, completion of the new logistics c facility, completion of the new food store to supplement the hospital's water supply and completion of the new hospital clinical waste incinerator.

During this period of rapid change and greater resources our thoughts not surprisingly turn to the retention, care and accommodation of the HMSB membership which good members of officers, nurses and the volunteer. It is intended that many of the purely single service members will be housed at the Institute of Naval Medicine to form a historical local point for regular and retired alike.

Finally, a Navy wide exercise, MEDEN 86, is underway to assess the present RN capability



to fill our expanded manpower requirements. For the HMSB this is an important and working manpower exercise to confirm the limits of our present capability to staff our naval members and the balance of resources (regular and volunteer) required to fully support the Naval Contingency Force.

A Croud GMP

Sergeant Ron Abbott
Naval Division General (Private)

Fleet Update

Since the last update, articles by CINCFLEET a number of changes have occurred in the organisation of the Fleet Medical Division and its interface with sea lodgers on the Portsmouth Headquarters site.

The daily running of medical support to joint operations remains primarily the function of CINCFLEET Medical Division with the recently inaugurated Permanent Joint Headquarters (PJHQ) providing a coordinating role where necessary.

PERMANENT JOINT HEADQUARTERS (PJHQ)

PJHQ was inaugurated by the Secretary of State for Defence on 1 April 1996 and the new Integrated Operations Cell opened for business shortly after. It has two Ops and Plans — Brigadier R Brown — (overall PJHQ) with operational medical staff. This staff will report to ACTS (J) through D Med Ops and Plans, but will additionally, be functionally responsible to ACCOMMAG in the PJHQ. The balance of D Med Ops & Plans staff will be located there, general of Portsmouth and are responsible for joint medical planning, ensuring no appropriate and available medical support during contingency planning and producing the medical plan for Operations — incorporating bilateral agreements for combined operations as appropriate.

FLEET HEALTH DEPARTMENT

The Fleet Health Office is now part of CINCFLEET Medical Division Portsmouth and, hence, located in South Terrace, Portsmouth Naval Base. As the issue this month is published it is anticipated that all posts in the post of Fleet Med will be fully manned. The office is available to provide occupational health and safety advice, injury, sickness and exposure rates to all CINCFLEET Type Commands and their world wide. Staff officer responsibilities include:

S01 (Health), previously known as (MAGH/Fleet) is predominantly based in Portsmouth and is focal point for occupational medicine advice.

S02 (Health) is also SMD to F06T and is based in Plymouth providing a point of contact for all CINCFLEET units in the South West with access to Naval Health Inspectors and other occupational health support.

S03 (Health) a Naval Health Inspector oversees the work of two other MHIs working from the Portsmouth office.

EXPEDISE PURPLE STAR

Expedise Purple Star was a major deployment of Fleet assets and employed 8000 Army in its primary role in ATS. The opportunity was taken however to deploy, an RCAF detachment for training at the PCRS facility. This enabled a detailed assessment of both equipment and facilities and provided a focus for future efforts towards realisation of the facility during Exedise Command Challenge in September 1996 and the larger exercise which would prior to this in 1998.

PRIMARY CARE (PC) ORGANISATION

The Primary Care Organisation at PC is at its growing locus in a new fully staffed and located South Terrace, HM Naval Base, Portsmouth Headed by a Surgeon Commander with a staff of two Medical and CPOs, this post is dual based in SPMO and F06T. The PC organisation is responsible for general administration including equipment and health, casualty tracking and clinical costs.

SECK RAY PLANNING

ACCOMMAG is the tick box planning and design authority for the surface and subsurface facilities and, on behalf of HADRCON, gives advice on the design and refurbishment of these medical centres. This includes advising DCSHep and Commanding Naval Base, Southampton on new build vessels and work required both before and after entry.

ACCOMMAG also has responsibility to ensure the sustainability of medical assets, used by operational units having closely with DMSD and the MSA where necessary. Advice and validation of current roles and assets across is undertaken by the RN Medical Support Advisory Committee which meets quarterly and is chaired by ACCOMMAG.

To improve record keeping and communications information flow, DMSD has initiated MOD wide Primary Health Care Information System, will be installed on COMOPS and the future LPH, HMS Ocean, in due course. Its responsibility for use on regular, irregular and submersed is currently being reviewed.

EDC AND FUTURE BIDS

As a result of DCS 15 monitoring of New Service Bids and Modified Payments by FLEET, PDNA and HQNM is now subsumed into CONCEPT. A database of all CONCEPT Modifications Major Medical Equipment holdings is currently being established and will assist in monitoring new demands of equipment

ensuring both procurement of medical equipment, and advice on medical expenditure is adequately coordinated throughout the FLEET TLB. The post of W(OPTM) has created this responsibility.

M P M H Faine OAR

Surgeon Commander
ACOM (A&E) CONCEPT

And now, a time for consolidation

The middle of the year is a time when QARNNS personnel get together to discuss the past, present and future — to reflect on the performance but ultimately rationalise the summary. This year the QARNNS Officers Association meeting in June managed to avoid the London and City Rights march in London, but did meet the Euro '96 supporters — fortunately before the match as they were in a good mood.

These members of The QARNNS Officers Association were invited to participate in a performance of this year's Royal Tournament and were present at the Arena for the Finale when Princess Alexandra, our Patron, was doing the salute.

QARNNS personnel working within the Medical Services are becoming more used to working in a 24-hour environment and medical cooperation is much more precise.

Certain patients in the Royal Hospital Maida are becoming more familiar with the varied and departmental moves required by the structural changes under way and also with the variety of uniforms worn which reinforces the need for all personnel to wear a name badge and to be addressed by their rank, title or title.

Time for consolidation of the medical changes in our working practices is now required but continuing professional development must remain ongoing. All those serving vehicles are now proving their knowledge, experience and competence to develop competence in patient care and operational effectiveness. There have been a number of accidents to remind the Defence Medical Services are able to meet their operational commitments and QARNNS personnel should be involved in another year like this year.

QARNNS officers and ratings continue to find time for a number of off-duty activities and sports. The Franklin Boatyard Torus Tournament, held at HMS Torus last year, was a great



success and we are hoping that the high standard will be reflected in the results of the Inter-Manning Services Torus Tournament to be held this year in Alderney.

Despite the multiplicity of change, a more efficient financial dimension to our work and a requirement to take a hard and objective look at the future to quantify the most cost-effective delivery of patient care by qualified nursing personnel are no longer the primary concern or potential in the focus of our attention.

C M Taylor RRC QARNNS

Captain QARNNS Materon in Charge

The RFA Medical Branch: 10 Years of Progress?

It's not so long since the mere thinking of the words might have prompted a blank look or a cynical smile. Even today the term 'Branch' seems rather grand for a small group of doctors of varying backgrounds and ages, operating separately as isolation. This article is a personal view of the past, present and prospects for the future of the RFA Medical Branch, and is unaffected by the wind of change blowing through MED.

ORIGINS

The Branch arose by reason of the Merchant Shipping Act 1950, an act requiring the attendance of a registered medical practitioner (not otherwise specified) on a ship's company under certain circumstances. Herein lies the origin where this company, including passengers, means 100 persons and where the ship is engaged upon either a voyage of more than three days duration or one which takes it more than one and a half days away from a port possessing adequate medical facilities. In the Royal Marines, as in RM, the medical personnel in the First Class CO's Deck Hospital, the RFA simply complied with statute, working in a branch comprising either a warship personnel with no continuing medical education or a shore company, and thus providing a distant and, with little professional continuity. Fortunately, many doctors succeeded in providing a good clinical service to their ships, to their individual crews. On the positive side, the very diversity of RFA MED offered a broad range of clinical experience — a challenge to do so.

In days with no MED, generally those with experience of RM and the medical work was confidently directed to a dock office, operating usually in the conversion of World War Vessels.

DEVELOPMENT

From in the South Atlantic and subsequently in the Gulf have rights, commitment attitudes upon medical support at sea. The placement of an RM hospital team in RFA Fleet Group during Operation GRANBY, prior to the arrival of RFA Agor in FLEET, illustrates the value to a Task Group Commander of the large medical facilities in major RFA units. Similarly, RFA Daystar

(RFA MD) and RN RMA, collectively operated in the Gulf in 1991/92 and upon during GRANBY as a Base Medical Centre, in which personnel could be landed, either temporarily or for subsequent repatriation.

With the advent of Type Command areas under CDR/FLIBTS in 1993 the RFA Medical Branch became, for practical purposes, a Fleet unit. It had already been recognised that Branch structure had facilities were inappropriate to current naval operational concepts. Indeed such had already changed (removal of the post of Principal Medical Adviser in 1986, increasingly close liaison with the RN Medical Branch, adoption of RM codes of medical status in 1992), evidence of an HQ Medical Services Officer in 1993 such that the Branch had already moved from the largely previous of primary care to extended stage, comprising a variety of underpinning of medical care at sea. It was a start.

CONTINUING EVOLUTION

Recent milestones have included the adoption of Medical Branch rings, and the development of computerised status accounting system integrating with the new Medical Supplies Agency supply organisation. Occupational health is now on the agenda, with the establishment of an HQ OHS Section. Formal training for new medical officers undertaking medical duties, known nowadays as, Officers with Medical Responsibility (OWMR), has been introduced and the education of those, shown in the Dock Department reviewed. An RFA personnel now OMR at sea — OMR MED.

The introduction of LPO and HQ Medical Advisers (RFA) has been particularly successful, although its impact has been reduced by their use in (often normally filled by MDs) while the Branch remains concentrated below decks. The legal responsibility for MDs cannot be ignored — MA, as MJT substitutes for MDs. Nevertheless an MA can operate effectively in a large ship where the absence of an MD would otherwise lead to an unacceptable burden upon the OMSB.

Even characterised as an one limited support has been provided, principally to ships with no

MOF or RFA during the short post maintenance work up period available in RFA's. Larger ships such as the Auxiliary Oiler Replenishment class (AORs), complex vessels of 35 000 tonnes with a ship's company (RFA, RN and RTRN) of around 130, also require considerable resources in working up, having a Medical Department staff of ten — the MOF Deck support is a long stretched one, and has already shown benefits.

WHERE DO?

What is the focus for the Branch? In itself one has questions on working particularly in order a political economic climate and in its links with RN Medical Branch practice throughout its continued existence in a separate entity will necessarily be challenged. However, while the RFA remains a maritime-based organisation, the Branch must cope with all the standard possibilities, including the age range of RFA personnel, their main-duty occupations and requirements and the legal requirements laid upon it by UK and EC legislation. It follows that this demands the involvement of a number of other bodies among as personnel. The adoption of relevant aspects of RN practice and a more broadly a

flexible composition, including short-term contract personnel, should reduce the isolation of the Branch, thereby improving its professional image. A commitment to its service standing is also essential to the recruitment and retention of suitable individuals.

A worthwhile challenge? To make a work we need the support and commitment to develop with medical resources an appropriate infrastructure, which aims:

1. continue to provide for the day to day needs of the Fleet at sea
2. be prepared to play its part in the overall officer medical support plan
3. take forward the concept of a preventive Occupational Health business capable of effective interaction with the DSE/HS&T Health and Safety organisations.

And order? Undoubtedly, too a case to be done, a lot of support, and a good deal of faith — after all, we have come a long way on a ship since 1945. It's done too, too, as the RN/HS&T MOs/MAs and looking for a career back — talk to us!

Stephen, Chief Officer J F Leonard
Principal Medical Advisor
Royal Fleet Auxiliary

NAAFI TEA SALES FLYING HIGH

The sale of Naafi tea is moving upwards sharply. The success story this time is support for life at sea and success over seas. The traditional support to seafarers on *Arcturion International* 24/7.

Others of traditional kind are followed to Address the national sailing centre at Barmouth, Aberystwyth, Bristol, Cardiff, Southampton, Glasgow, Loughborough, and the various methods adopted from there including the new 1000 (BAC) in 1995/2000, including making long, medium and short tea bags available.

In 1995, Naafi's community team manager, Birmingham, advised and advised. The Naafi Tea Company was the catalyst as a result of its response and good, consistent quality.

And, more recently, *Arcturion International* found that the tea house was in the last time in its last that quality in their other boats were right.

To make a good cup of tea, the house must be covered up, making water and tea a few minutes to three (some water boiling water just at 100°C. At 100°C, however, it reaches boiling point at a lower temperature. Since Green, Naafi tea is very much 'hot'. The water boiling water is 100°C — if it is added at a lower temperature the house is ruined! As a result, *Arcturion International* needed a strong tea that was of a good enough quality to be able to 100°C. It is a good quality tea that can be used for 24/7, including with the Naafi *Arcturion International* 24/7.

John King, *Arcturion International*'s sailing manager, said: 'The water has been a big hit for seafarers, whatever their nationality. It is a good quality and strong, making tea which produces a great taste when it is served in the world.'

Naafinews

Debating Point

Investigating Gulf Veterans' Health Concerns

J. T. Graham

Abstract

In order to answer the questions arising from the health concerns of Gulf veterans, the Veterans Affairs Medical Service has initiated several health programs that they are to independently address. However, this concept is limited and there are concerns about its capacity. Research efforts alone will not be sufficient to determine if veterans are experiencing an excess of ill health nor progression of epidemiological studies will be strengthened in collaboration with the Medical Research Council.

INTRODUCTION

Medical Associations' Progression

Gulf veterans began to come forward in 1990 complaining of medical problems which they attributed to their service in the Gulf. This became known as the "Gulf War Syndrome (GWS)" and attracted reports in the *LA Times* (Latter Syndrome)¹ which had started to appear about three months previously. The MoD formed the Medical Associations' Programme (MAAP) to offer medical care to these veterans and to determine if there was a single well-recognized syndrome specific to service in the Gulf. The findings of the MAAP have been summarized in two letters from the Surgeon General to the BMJ² and a further report appears later in this Journal. So far over 500 persons have been seen. They have been found to be suffering from a wide range of organic and psychological conditions. There are no obvious clusters.

There is no evidence from the MAAP that there is a novel condition or syndrome. Consequently there is no need for further work which is best research. The individuals reporting to the MAAP are well selected and cannot be used

as a study population if we are to try to describe the health effects of service in the Gulf.

IS THERE EXCESS MORTALITY OR MORBIDITY?

War causes casualties. Veterans may return from a campaign suffering from a wide range of physical and psychological disorders. Some may have wounds which take a long time to heal and others may only become aware of their ill-health after their return. Of course, veterans will also suffer the full range of illnesses to which the general population are prone. The fundamental question is whether or not veterans are more ill than if they had not gone to the Gulf.

BIRTH DEFECTS

Initial concerns were about the health of veterans themselves. Around 1990 however, there has been mounting concern in the media that the offspring of Gulf veterans may be suffering a range of birth defects as a result of their parents' service. There is no press case evidence to support the allegations made in the media. However, a great deal of anxiety has been generated; these cases need to be investigated quickly, not unnecessarily, so as to reassure anxious veterans. The MoD does not generally provide health care for women families in the UK so we are not able to answer these questions. Work to study these cases will have to be carried out in collaboration with the Office of National Statistics (ONS) who hold the data and in the national system of surveillance.

MEDICAL COUNTERMEASURES

Medical countermeasures, the vaccines and drugs, used to protect personnel in the Gulf against Iraqi chemical and biological weapons have been cited as the cause of illness in veterans. The American has increased their interest about

Leporello Oliver (Latter Syndrome) is a Consultant in Public Health Medicine working in the Veterans Medical Services Directorate, Little Broom.

returning to consciousness and do not consider that this is a normal response. There have been differences between the UK, American and French data on the US side. These should be explored to ensure that there is no cause for concern.

Studies are being undertaken on both sides of the Atlantic into the side effects of nerve agent prophylaxis (NAPF). These need to be reviewed and a consensus achieved as to the relevance of further work in this area.

Medical records in the Gulf were poor. As an armed force requires updates and NAPF compliance should be assessed. This work should enable us to define groups with different exposures.

AVAILABILITY AND QUALITY OF HEALTH DATA

Health surveillance in theatre was sparse and there has been no systematic, post conflict health surveillance. Recently collected health data are very limited. Deaths, medical discharges and periods of hospitalisation for over 24 hours can be described. We have no validity of short hospital stays, relevant from primary to secondary care or health service in general practice. Furthermore, in theatre health databases did not include demographic data or was not possible to provide standardised health data or to make comparisons with matched populations. Additional information was available from a number of other sources.

The Master Casualty List provides some further detail about personnel returned to hospital or theatre.

Personnel data is available and will give an indication of demographics (male, civilian, military, overseas only) and letters for service status.

It is more obvious in an early stage, however, that we would have to rebuild our health information systems if we were to produce meaningful data.

INTERNATIONAL COMPARISONS

Compared to the US deployment, our members were comparatively small. We have therefore worked with interest the findings of research programmes in America. For example, we have noted that the Americans have failed to find a systematic despite having conducted many thousands of interviews. Like us, they are now re-evaluating epidemiological studies that reveal if there is an excess of morbidity or mortality. We have also examined reports of studies into birth

defects to see if there is anything relevant to the offspring of UK veterans. We take note of the conclusions of the Research Committee of the Institute of Medicine (IoM) which gave an authoritative and impartial insight into American research.

The IoM has recently formed a Review Committee to examine research recommendations from various NAPF and other medical preparations. We have been invited to participate in their work.

Federal Gulf related research is now coordinated by the Research Working Group of the Persian Gulf Veterans' Compensation Board which comprises representatives from the Department of Defense, Veterans Affairs and Health and Human Services. This group has been of considerable assistance to us as we have developed our research measures.

Some Canadian veterans have completed a medical conditions which they attribute to their service in the Gulf. Their Defence Medical Services have offered veterans medical assistance, which matches the same level as in US and UK. They are now developing their ideas about subsequent research and are considering setting up a joint British/Canadian body to oversee the programme.

In their report the House of Commons Defence Committee noted that we require Gulf health problems in all systems which formed part of the Coalition and the medical counter measures which they used.

THE ROLE OF RESEARCH

The principal aims of the Gulf Health Research Programme will be:

To determine if Gulf symptoms are experiencing more ill health than they would have had they not gone on Operation GRABITY.

To identify possible risk factors, including environmental and NAPF to which personnel might have been exposed.

To develop appropriate diagnosis, treatment methods, and preventive strategies if an excess of ill-health is demonstrated.

OBJECTIVES

The Gulf Health Research Programme will have the following objectives:

International Epidemiological Studies

Medical Assessment Programme Database
There is a wealth of data being collected by

the MAP has it has not been systematically analyzed. There is no obvious cluster of disease that points to a pressing compliance and consistency should be obtained from a primary in order to do this. data is being captured on a database which will allow for coding and cluster analysis.

Gulf Epidemiological Database. All data held by the MRC which helps describe the health experience of Gulf war vets is being collated on a database. It includes information from personnel and pay records, as well as medical records data, and will allow us to describe the mortality and morbidity of Gulf veterans in detail. We will also be able to draw comparisons samples from those who were in service at the end of the Gulf but who did not deploy.

Database Augmentation. A series of in house studies will be carried out using medical data to augment the Gulf Epidemiology Database. They will describe:

- Mortality patterns in veterans who are still serving. Discharge patterns in veterans compared with other service personnel and the reasons for medical discharges of veterans.
- The medical histories of veterans discharged from the medical services.

Study of War Prisoners in Gulf Veterans. **QMS Mapping.** The medical records of veterans and an appropriate comparison group will be mapped by the MRC Clinical Register to facilitate long term follow up of mortality and cancer registration trends.

Exposure Studies

Administration of Medication Countermeasures. Exposure to medical countermeasures has been cited as a possible cause of ill health in Gulf veterans. We will describe:

- Usage of therapy and the defence administration countermeasures, including administration patterns.
- MAPS compliance and the incidence of adverse reactions.
- Identify exposed patients.

Troop Location. In order to be able to draw the exposures more comprehensively we will develop an exposure model which identifies the location of individual troops on a daily basis.

EXTRAMURAL RESEARCH PROGRAMME

Observational Studies. DATD does not have the expertise or resources to run major epidemiological studies. Furthermore it is

important to ensure that such a programme is open to be independent and of the highest quality. Therefore, a series of observational studies will be entered under the guidance of the Medical Research Council (MRC) to determine whether or not veterans are experiencing an excess of ill health.

Reproductive Outcomes. Veterans' fertility patterns and reproductive outcomes will be described. Information will be derived will have a background to a more comprehensive study commissioned by the MRC.

SCOPE, ASSUMPTIONS AND CONSTRAINTS

All types of mortality and morbidity in Gulf veterans will be examined. The Gulf Health Research Programme will involve related research on health practices and other outcomes.

We will not duplicate existing health databases, such as the NHS CR or the NHS Register of Birth Deaths. We will compare our data with them, where possible and identify potential for synergy and ability to describe the health status of Gulf veterans.

We will not duplicate work carried out elsewhere, such as the US. We will however replicate studies which have demonstrated a possible linkages for cancer morbidity in Iraq, UK reserve populations, or a small scale or alternative data reference to UK Gulf veterans.

The work and findings of the GHRP will be published and disseminated. Publications strategy and information will be developed in advance. Register will usually be published at regular medical journals and subject to peer review.

Where possible, studies will be designed and disseminated, presented in such a way, as to permit meaningful comparisons with the US thereby maximizing added value to our own programme.

Identify clear aims, will be difficult to obtain particularly where studies involve both serving personnel and individuals who have been discharged.

CURRENT PROGRESS

The Gulf Epidemiological Database has been commissioned and is beginning to produce initial results. A marked, register wider effort is being demonstrated which will have to be corrected before we can draw meaningful conclusions from the data.

The MAP Database is not yet sufficiently robust to allow for detailed chronic analysis.

Following this OMS is well under way and will enable us to carry out retrospective mortality analysis later this year. Unfortunately, as has earlier regulations, set out up to date, we will not have good cancer incidence data for some time.

A number of groups have been formed which are looking at exposures to modes of environmental and other possible risk factors such as pesticides.

Our main effort has been concentrating the epidemiological research programme in collaboration with the MRC. It is an absolute and a Call for Proposals appeared in the medical Press at the end of May 1996. There was

considerable interest from civilian academic departments and 36 outline proposals were received covering a broad range of research. The MRC will consider the proposals and invite detailed proposals from the most promising applicants. They intend to convene the session of the programme at the end of October 1996.

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Operational Medicine

The Royal Naval Reserve Medical Service Medical Support Assistant Revisited

R Brooker

INTRODUCTION

The Medical Support Assistant (MSA) is an RNR specialising which tends to be unfamiliar to the regular RN Medical Branch. The early experience in the formation and organisation of MSA is usually have already been documented.¹ The purpose of this short article is to provide a critical view of the training and work of the MSA.

MSA TRAINING

MSAs were born in 1947 with the aim of providing short-term nursing care for projected casualties from a conventional war scenario in Western Europe. Much has changed radically since then and the likely operational scenarios where knowns could be used have changed with time. Out of area deployment requires different skills of the MSA than those usually envisaged. The divide in roles between an MSA (Chartered Nurse and Care Assistant) not trained to function as independent practitioner, the MSA, will be supervised by a trained health care professional. In the operational role, the MSA, will be capable of Level 1 First Aid in RN standards and will assist in the management of urgent medical and pharmaceutical casualties for a limited period ordered a PCRS.

On completion of their Entry Naval General Training, MSAs are undertake medical training at two Ports after which they are fully deployable in the operational role.

Advancement to the next higher rate involves further clinical skill, training, theory working under direct supervision of qualified staff, as well as modules in service administration and medical

department management. Skills acquired during Ports 1 and 2 are operational during training modules for next higher rate, in medical training camps and on sea going exercises. Because MSAs are part timers, there is potential for staff-fade. However, this effect is mitigated and skills maintained, sustained by regular and regulated Regional Training workshops which are presented in each of the three Regions for all groups. These have a high practical content and include table of clinical signposts on the needs of Royal Hospital Medical are also organised.

The main examples of the MSA are:

- **Motivation** — the edge is not how long under their of work at Nelson's time that a volunteer is work on personal care. All Reservists are volunteers and as such are enthusiastic about both their training and their operational role.
- **Willingness to learn** — despite a lack of sea going opportunities, MSAs continue to participate fully in annual shore based continuous training periods as well as further courses.
- **Adaptability** to the operational environment and the natural constraints and shortages, beyond theory.
- **All training is geared towards the operational role** unlike that of regular Medical Branch Ratings.
- **Discovery of skills** — MSAs being many different skills to the RNR, including medical applications, eg physiotherapy, laboratory and other medical qualifications, both as medically and non medically related areas. Many former Royal (RNR) are ex regular RN and some have specific tasks as Commanders.

The principal responsibilities of the MSA are that:

- He or she is a genuine Medical Branch Rating and despite strategic efforts to

Commander, Commander, Royal RNR is a physiotherapist at an NHS Hospital

Part 1 - F1050

Minimum of one and a maximum of two years long

Level Two First Aid Training

Anatomy/Physiology

Annual Continuous Training in RMB Refracts

Part 2 - J1050

Minimum of one and a maximum of two years long

Level Three First Aid Training

Clinical Nursing Pharmacy Service Administration

Annual CPD at RM Medical Staff School

continuous skills fade it is inevitable that this will happen just as it does for regular RMBs.

- As, on the face of it, facility in acquiring hands-on and visually representation and as such is included in the text. Both pay can only go so far in highlighting action and reaction to actual injuries.

CONCLUSION

The MSA was developed to serve medical or

nursing professionals in the direct care of casualties (coloured) - PCRS. They also have the skills to adapt to work and life followed capital plays with enhanced motivation, and enthusiasm for whatever task they are given.

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From the Centre

A View from Whitehall

Chris Stanford

INTRODUCTION

A year ago, if anyone had asked how the Royal Navy was doing, after the protagonists of Operation Sea King and the Defence Crows Studies, that happy thought from Whitehall would not have occurred. The situation today is very different. If I were asked to sound like a medical professional then, making very good progress might be the way to start best.

In this article I want to justify this diagnosis and offer a truly personal and uncoloured view from Whitehall. It is to someone who has been back on the Ministry of Defence for eight months, having previously been Captain P1. Even so that does not mean the world changes. It is an exciting time.

My perception comes from the privileged position of seeing what goes on outside the Main Building, hearing from a wide variety of people in the real world, and those discussing the world outside, some with some 17 other navies through Staff Talks.

Contrary to summer and autumn, we don't have time to relax here but every minute plugging the numerous verbal slugs. One left our family unit of four in the back time. We are very conscious of the need to keep in touch. And in just the changes in. This article is very much part of the process.

A PERIOD OF STABILITY AND SUCCESS

A year ago, much to our consternation, there was beginning to be an attitude of people opinionated in the wake of MCS studies. The Secretary of State, opened off his LTC, which was knownable to the Royal Navy and Defence generally. We were able to plan our way out of a dark and difficult period following the inevitable changes after the end of the Cold War. But would this confidence and opportunity last?

The Government, as always, expressed by the Prime Minister in a period of stability, its defence planning. No one was sure, it would happen. It was, and was, but, being those that protest.

We had the news a year ago that the time for some kind of reorganisation would be here. There were still those who doubted this confidence. But it has to come to first, without the necessary top line, now, from opened right up again.

A year on, we have navigated through a difficult LTC with the front line not only intact, but enhanced to cover key areas. Work reinforced in various the manpower plan and a clear personal strategy has been completed. HMS Drake has been launched, and in the other end of the amphibious timeline, HMS Pembroke had a successful Exercise Pacific Sea thanks to the close effort and commitment of her people, and of those serving under the Fleet Support unit.

Of course, we will have some significant difficulties, but let anyone give him the words of words like support and recovery, a SW and amphibious, his willing and welcome. In a real time right of how much the Royal Navy is doing really well.

OPERATIONAL PERFORMANCE

In London, we last usually heard of how hard people are working in sea and advice to compare the operational performance. In the last twelve months the Royal Navy and the Royal Marines have conducted 18 live operations. More have been conducted in 21 HMCs and major sea operations.

On an average day, we deployed 14 ships, being 14 smaller than port and aircraft 13,000 tonnes in size. In fact, they figure out, on occasions in over 60 days, and this represented over 75% of the available programmable hulls. It is as an achievement matched only in times of transition, and it has happened during a period of considerable cultural change.

Chris Stanford is the Director of Naval Staff Secret in the Ministry of Defence.

JOINT OPERATIONS

Perhaps the single most conspicuous symbol of this change was when the Permanent Joint Headquarters opened on the first of April. This development will bring further changes in our operational perspectives. Although there is I write to June, we very much look forward to the Joint Rapid Deployment Force (JRDF) forming up on the first of August. There are major steps for the United Kingdom's joint defence approach and even then the Royal Navy fully supports. We expect to make a major contribution to both.

The JRDF is, I believe, central to the future role of the United Kingdom's armed forces. It is also a cornerstone for the development of the Royal Marines and our amphibious forces. Only with the flexibility that our ships, submarines, aircraft and Royal Marines provide can serious United Kingdom joint operations be mounted around the globe.

THE CHALLENGES FOR THE FUTURE

For us, in our worldwide context, that we must look for the pattern of future operational deployments. Now how water forces are being built in the Far East and elsewhere, which could pose a challenge to the United Kingdom's interests or by which I sense the security of our people, resources, trade and commerce is threatened, and often, indeed such challenges can occur at short notice almost anywhere in this new, uncertain and troubled world.

THE OVERSEAS DIMENSION

Why then does overseas not at sea, or overseas operations? The reality is deep and convincing. In the first place, it is clear that the overseas deployments by the Royal Navy are in the national interest. In the example the *Arundale* Patrol to the Persian Gulf, now as in tomorrow, our ships, supported some of the 95% of the United Kingdom's trade that goes by sea.

The deployments also represent a vital economic, insurance for the United Kingdom as one of the world's largest per capita insurance consumers, our contribution to security and stability, an acknowledged as essential regional growth. Trading links are nurtured by the Royal Navy's presence and protection.

But there is much more as it that can partly national interest. The world community (and the general public) expect the United Kingdom to play its part in world affairs. As a member of the UN Security Council we very often take a leading role in the UN's peace-keeping, as in

Former Yugoslavia. As a result, other nations look to the United Kingdom for an appropriate contribution.

As part of the Royal Navy deployments are a vital offshore, naval and capital assets of providing a flexible contribution, response in support of peace. The Royal Navy's smaller than 75 years ago has its ships are the more capable. Our highest quality of the Royal Navy and Royal Marines operations really respond, we look for the ability to move with us.

So too in the United Kingdom's and Royal Navy's reputation for tradition and determination. This is especially valuable in peacekeeping and humanitarian work. In that work too, it is my belief that the United Kingdom is a moral nation, eager to look further than the close concerns to play a fit and proper part in world affairs.

THREE DISTINCT ROLES

I judge that from this, inevitably, there are three clear roles set us to play, each with its own distinct shape, but all of which have in them, even the emphasis on the Royal Navy operating as part of a joint force. This is true when it comes to our warships, where the need to raise our skills at CWS, ASW and ICB operations is brought more sharply into focus by the requirements to provide enough ships for the JRDF.

The second role, which I shall term *expeditionary warships*, the members JRDF. As a result, expeditionary warfare is about the need to command control and fight land, air and sea forces from some 500 miles out to sea to over 1000 miles inland. This encompasses over 90% of the world's cities and economic areas.

A year ago, on the Journal Jonathan Powell's eloquent words highlighted the need for the United Kingdom's armed forces to be able to deter, to control and to intervene. This doctrine is in the context of expeditionary warfare and the JRDF with the Royal Navy's operations, shipping, will provide much of the United Kingdom's ability to conduct such operations.

My final role for our maritime forces, in the next few to twenty years will be in what I term *constitutory states*. These vary from peace-keeping and humanitarian work to sea rescue and piracy patrol. We have seen how successful they can be recently in Bosnia and Mozambique off the isolated coast of West Africa and in the continuing work of the recent West Indian Guardships.

In each of these three disciplines, we could — and I believe will — be called upon in an irregular and disorderly in the course of the next decade. So now is the time to ensure that we have the groundwork laid to reconfigure the Navy to meet these needs.

OPERATIONAL CAPABILITY

One advantage we have, over last year, is the improvement of the opportunity to question an Admiral Carrier in the Admiralty and the ending of the SHARP QUARTER period by our delegates and delegates. In that time, the Royal Navy averaged over 16,000 ships and drove out 2,500 of them in important tactical matters.

It was a very significant achievement to keep a fleet as well as well as our operational goals for these years. It was a vital movement, with the new Sea Harrier F44 aircraft proving to be one of the most successful aircraft in Britain and the carrier's advanced command and control facilities, offering key support to the fleet's ability.

But the achievement made huge demands on our people, the ships and the support crew, and it did not make our operational capability particularly for contingency tasks. That is now largely the outcome. As a priority, too, we must address the need to improve Navy's overall performance, sustainable and to get our manpower strategy right. What has been apparent already this year in the sheer volume of work being done to achieve this aim — we are getting there.

COMMUNICATION

We must also ensure that our people know what is happening, that they have honest open and timely information to help them accept the demands we are placing on them. It is one of my personal responsibilities in London to ensure that Naval managers — I prefer the term leaders — have the information they need to keep their people motivated and in the know.

We are working hard to get this right, but I know we will find some way to go. Now

managers will follow us. Finally, I am convinced with a completely open mind the best way of keeping the Royal Navy in the Public Eye. This is an important area so that the public can better understand the importance of a Navy in the new strategic environment. It will also help keep the recruiting momentum going.

CONCLUSION

That does my personal overview. It is a broad vision of a Navy which is moving in the right direction, through the effort and commitment of its people and the strength of its crew. A Navy in which the pace of development and strategic change is to be maintained and where there is already talk of a new dimension: Initiative Progress. And the services all three elements which it should be — on the first line.

I know that in many ways, our Navy has been reduced, the result of the change has been a degree of uncertainty. But I believe you can look at the future with a new confidence. The three elements that are placed on the Royal Navy are indicative of the need for maximum resources around the globe. They are only a reminder in the FROG and the RUCF and the United Kingdom's response to world events.

The Royal Navy has never had ships whose average age is younger than it is today. When people and equipment are of such quality, the capability they can bring to the water and power the power is remarkable. With the expected orders of new ships, submarines and aircraft we will be well set for the operational demands of the next twenty-five years.

As I pointed to the start of this article, we are making very good progress along that road. In fact, I should go further. I suggest that only one medical campaign is now appropriate to describe the Royal Navy in the summer of 1990. — PJ

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Clinical Management

Pathogenesis to Prescription: progress in understanding and treating Acid Related Disorders

R. H. Hunt

INTRODUCTION

The acid related disorders, include gastro-oesophageal reflux disease and duodenal and gastric ulcer, all of which are commonly encountered in clinical practice. There can be few areas of medicine in which there have been so many dramatic advances in the past few decades. Our understanding of the pathogenesis of gastric ulcer disease has been revolutionized by the realization of duodenogastric reflux. Our approach to lapar and duodenal ulcers has been revolutionized by endoscopic practice, the demonstration of oesophageal reflux, gastric ulcer and confirmation of *H. pylori* infection by biopsy. The approach to treatment was revolutionized by the development, during the 1970s, of the first-generation H₂ receptor antagonists (H₂RA) in which the Bristol Royal Infirmary Service played a notable role.¹ These drugs dramatically reduced the need for gastric surgery and contributed to widespread consideration by the medical community of the gastric duodenal reflux disease.² In the 1980s, the proton pump inhibitors (PPIs) were developed and these drugs provide more effective control of gastric acid secretion than the H₂RA especially during the daytime when food is required. Consequently they have provided the most effective treatment for gastro-oesophageal reflux disease (GORD) yet described. However, it was the studies of Marshall and Warren in Perth, Western Australia in 1982 which revolutionized our concepts of the pathogenesis and the management of gastric ulcer disease

which can now be cured by eradication of the infection from the stomach.³⁻⁵ This paper will review critical issues about understanding of the pathophysiology and the management of gastro-oesophageal reflux disease and of gastric ulcer disease.

GASTRO-ESOPHAGEAL REFLUX DISEASE

The symptoms of GORD are considered to result from the pathological exposure of the distal oesophagus to acidic gastric contents. The cardinal symptom is heartburn, which is usually well defined and lasted up to between 20 and 40% of adults at various locations and was reported to occur daily in 7% of a hospital staff population. The majority of those with symptoms self-medicated with over the counter (OTC) antacids or more recently H₂RA.

GORD usually follows a chronic course with more than 70% of patients having recurrent disease, which usually relapses in the same degree of severity to that at presentation however, with the more severe grades of oesophagitis as determined endoscopically (i.e. grades II/IV) recurrence may be as high as 80% in six months.⁶ About 20% of patients may develop complications such as oesophagy, which occurs in 1-2% and is likely to share with severe reflux and more often in patients with advanced (reflux) Barrett's oesophagitis is associated with a prevalence of 50-15% but a more frequent when compared to patients. Barrett's oesophagitis occurs more commonly in those with severe reflux disease, and may be associated with a higher incidence of oesophageal reflux carcinoma, bile and duodenal content. The importance of Barrett's oesophagitis lies in the 30- to 120-fold increased risk of oesophageal carcinoma.

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The pathophysiology of GORD is multifactorial although considered primarily as a disorder of oesophageal motility. There is usually reduced peristalsis of the distal oesophagus, reduced lower oesophageal sphincter pressure and an increased in duration lower oesophageal sphincter relaxation (TLESB) which are not associated with refluxing. These TLESBs are most common after food or water-delayed gastric emptying while the stomach may also be distended.

Thus, abnormalities all contribute to an increased likelihood of free reflux of gastric contents into the oesophagus. Maximal damage depends on the nature of the refluxate: the pH, the volume, the presence of bile, bile salts and hydrochloric acid (the acidity) and the gastric acidity are the most important in determining the degree and extent of oesophageal injury. Moreover, patients with most reflux, distal food to experience longer episodes of reflux, more frequently and the more oesophageal pH is below 4 for a significantly longer part of the 24 hour period. The concept is important as a study from our group has shown that fasting or oesophageal medical injury correlates directly with the oesophageal extent of oesophageal pH is above 4 for most of the 24 hour period.¹¹ If the pH is maintained 3-4 for 22 hours of the 24 hour day, 90% of patients will be healed within eight weeks of treatment (Table 7). Consequently the treatment of GORD while recognised to a chronic disorder, has focused on the reduction of gastric acid secretion with unnecessary drugs.

INVESTIGATION OF PATIENTS WITH GORD

It is usual to make a diagnosis of GORD on the basis of symptoms alone. However if clear symptoms, such as dysphagia, oesophagitis,

weight loss, anaemia or evidence of gastro-oesophageal bleeding, or proven oesophagitis should be performed. Endoscopy should also be considered when a patient is refractory to initial treatment. Endoscopy is the preferred initial investigation in this condition since it allows the extent of mucosal damage to be assessed and biopsy to be taken. Moreover, it allows more serious diseases to be excluded and the presence or not of Barrett's oesophagus to be determined. However, 30-60% of patients with symptoms of GORD do not have endoscopic evidence of oesophagitis¹² and a diagnosis of reflux disease cannot always be relied on the basis of endoscopy alone. Endoscopy is rarely necessary to initiate the progress of treatment and subsequent combination should be restricted to rapid monitoring of the progress of Barrett's oesophagus in patients, a view would be fit enough in undergoes oesophageal inspection should severe dysplasia or carcinoma be detected, or for the investigation of new and different symptoms in a patient known to have GORD.¹³ A further pragmatic approach to suppress symptoms of GORD is the empirical use of antacid therapy. A single high-dose of a PPI given for a few days will usually lead to a rapid improvement, response of the problem is due to GORD.¹⁴ However, this approach ignores most oesophageal lesions it can be safely advised.¹⁵

TREATMENT OF GORD

The treatment of GORD can be divided pragmatically into short-term and long-term strategies. Short GORDs usually symptomatic patients are making effective relief of pain even with non-acidic therapy. Healing response or objective criteria may provide further confirmation although this is not proven.¹⁶

Table 7 Relationship of acid suppression and healing of GORD with acid by PPIs and H₂/PA

	Duration of gastric pH > 4 (hours)	24 hour acid suppression (%)	Patients healed (%)	4 weeks	8 weeks
PPIs					
O 20mg od	~ 18	80	18	84	13 33 30
L 30mg od	~ 18	95	60	88	30 31 82
H ₂ /PA					
H 150mg od or 300mg qd	8	60	~ 10	~ 50	22 30

* = lansoprazole L = lansoprazole P = ranitidine

The therapeutic options available in the chronic stable ischaemic modification, such as weight loss, stopping smoking, avoidance of alcohol or drugs which aggravate gastro-oesophageal reflux and avoidance of CCB H_2 receptor antagonists.¹⁰

The protonic drugs such as cimetidine increase lower oesophageal sphincter pressure and accelerate gastric emptying. However, while these effects are appropriate for patients with GERD, chronic stable, well-positioned ulcers have been generally disappointing with low efficacy.¹¹⁻¹³ When combined with an H_2 receptor antagonist, the clinical benefits of cimetidine are enhanced, although the costs of such combined therapy.¹⁴

Since gastric-oesophageal reflux disease is largely a problem of prolonged oesophageal acid exposure, the control of loss of refluxing gastric acid becomes with supplementary drugs has been an increasingly effective approach. The H_2 receptor antagonists and the proton pump inhibitors are now widely used for the symptomatic reduction. These drugs differ in their effect on gastric acid secretion, since the proton pump inhibitors, act on the final step of acid secretion by the parietal cells. They block acid secretion in all known gastric and lower oesophageal esophageal acidity and control gastric volume throughout the 24-hour period, and are particularly effective in controlling nocturnal transient acid secretion. In contrast the H_2 receptor antagonists have a relatively short duration of action, and since only the histamine H_2 receptor is blocked, acid secretion and secretion is incompletely controlled.¹⁵⁻¹⁷ This has important implications, since acid patients with reflux symptoms during the day or the postprandial period and those with more severe disease who have nocturnal symptoms.

The H_2 receptor antagonists are about equal in effect to cimetidine and give reasonable symptomatic benefit in the majority of patients with non erosive GERD. However, they are usually as better than placebo for the relief of pain or burning, or half of the placebo-controlled trials of ranitidine ($n=6$), famotidine ($n=6$), famotidine ($n=7$) or ranitidine ($n=6$) in patients with oesophagitis of grades II to IV.¹⁸ These results are due to inadequate acid suppression¹⁹ and may also be compounded by tolerance to the H_2 -receptor antagonists making them less effective.^{20,21}

The proton pump inhibitors (PPIs) omeprazole and lansoprazole have been studied extensively in clinical trials of GERD and shown to have

clear superiority in all grades of severity of the disease.²²⁻²⁴ This increased efficacy of the PPI over the H_2 receptor antagonists (HRA) is seen in both the speed of healing and the overall healing proportions and is due to the superior control of acid secretion seen with these agents.²⁵⁻²⁸

Moreover, since gastric acidity is considered important in oesophageal damage, the median pH over the 24 hours obtained with omeprazole (Pang 15, 16) or lansoprazole (Kemp 14, 15)²⁹ is compared with ranitidine (5 daily (1, 7) or ranitidine (50mg bid (2, 4))³⁰ measures gastric acidity making the inference less damaging.³¹ Thus, the PPIs had 60 to 100% of patients after four weeks of treatment and 80 to 94% after eight weeks. In contrast, HRA after 12 weeks of longer to reach the same proportion of healing as are seen with the PPI at four weeks, costs which high doses are used.^{32,33}

Several studies confirm that the therapeutic margin of efficacy of the PPI in this condition is greater with acid disease.³⁴⁻³⁶

As can be inferred from the above, PPIs are of benefit in patients whose disease has been refractory to conventional H_2 receptor antagonist treatment with healing rates in 80 to 90% of patients treated with the PPI compared with 15 to 50% in patients treated with HRA with the results being highly dependent on the endoscopic grade of the disease.³⁷⁻³⁹ There is a concomitant benefit seen in respect of pain relief and reduction in extent of consumption.

Some patients with acid non-secretive disease may have troublesome symptoms which are directly related to oesophageal acid exposure.⁴⁰⁻⁴² These patients are usually detected by 24-hour intra-oesophageal pH monitoring which is most valuable in patients with persistent or atypical symptoms and minimal endoscopic evidence of disease. While some patients may obtain benefit from an HRA others will only benefit from the protonolysis of a PPI.⁴³ In the rare case when a patient is refractory to a proton pump inhibitor, the first consideration is compliance, second surveillance, upper or MALT dysplasia and lastly whether there is oesophageal dysplasia or adenocarcinoma. Thirty long term omeprazole pH monitoring is useful to construct the diurnal and nocturnal acid suppression. Some patients in whom acid secretion is poorly suppressed will require an increase in the dose of the PPI and this should be given at night rather than by increasing the single morning dose. This is because the plasma half life of both omeprazole and lansoprazole is short (1.7 hours) and therefore

this drug is daily available to block the H₂ ATPase (proton pump) for a small part of the day. Since the proton pumps are not constantly being synthesized and are only available to be blocked by the PPI when they are secreted into the secretory canaliculus, during meals frequently with the PPI is typically better to control acid secretion than increasing a single dose.

LONG TERM TREATMENT FOR GERD

About 10% of patients with GERD experience a recurrence within year after initial healing, and about 20% have one of the complications of the disease.¹⁴ These include ulcers, bleeding, strictures, Barrett's esophagitis or cancer. Thus, long term treatment strategies for GERD include continuous treatment by omeprazole, full dose which is appropriate for those with mild and mild/moderate symptoms and whose esophagitis is in grade 0 or 1. For those with frequent symptoms and grade II or IV erosive disease or severely-daily symptomatic maintenance treatment is required.

Omeprazole and the H₂ receptor antagonists are effective in preventing recurrence of symptoms and lower grades of esophagitis in mild disease.¹⁵⁻¹⁷ In contrast the PPI are effective in reducing symptoms and esophagitis across all grades of disease.¹⁸⁻²⁰ In one study from Australia, omeprazole 20mg daily was significantly more effective in reducing recurrence of esophagitis as compared with ranitidine 150mg bid or where omeprazole was given on three days of the weekend.²¹ At the end of one year, 89% treated with omeprazole daily were in remission compared with 33% on weekend treatment and 25% of those taking ranitidine. High dose H₂RA have been shown to be more effective than standard dose ranitidine but are less effective than once-daily PPI and are also more expensive.²² However, while it is logical to treat recurrent reflux disease by acid suppression necessary to maintain control of symptoms, omeprazole is often easier to take with a PPI than attempts to increase or reduce the dose of an H₂RA is required.

For patients with esophagitis complicated by ulcers, two large British studies have shown that the recurrence of dysphagia and the need for re-dilatation of the stricture is significantly reduced by treatment with omeprazole²³ or lansoprazole.²⁴ In patients with Barrett's esophagitis both omeprazole and lansoprazole usually enough dose have been used with similar

benefit to the extent of preventing complete symptoms and ulcers.²⁵⁻²⁷ Moreover, while short term trials no reduction in length of the segment of Barrett's esophagitis, there has been an exciting re-appraisal of data in up to three-quarters of the patients. Further studies are in progress using endoscopic laser ablation of the Barrett's esophagitis followed by testing under powerful acid suppression using a proton pump inhibitor.

SURGERY FOR GASTRO-ESOPHAGEAL REFLUX DISEASE

Surgey is seldom required for patients with GERD now that PPI therapy is widely available. However, newer techniques of anti-reflux surgery include laparoscopic fundal repair which is becoming increasingly well established. No comparative trials with long term PPI therapy have yet been reported and only five well designed studies of anti-reflux surgery have been published between 1983 and 1991.²⁸ In these studies the mortality was 0-33% and morbidity 19-33% which are clearly higher than the long term morbidity associated with H₂RA suppression despite concerns about sclerotherapy, the proven extremely safe with both the H₂-receptor antagonists and the proton pump inhibitors.²⁹ These original figures emphasize the importance of very careful selection of patients for or fundal repair. Surgery should be considered for patients who are not responsive to effective doses of PPI, who are non-compliant with medical therapy and lifestyle advice, and young patients with high volume reflux and severe disease, recurrent ulcers or pulmonary symptoms. The success of surgery will depend on patient selection and postoperative work up to confirm the diagnosis and avoid operating on patients with a typical symptoms who might have, for example, only achalasia.

PHARMACOECONOMICS OF TREATMENT FOR GASTRO-ESOPHAGEAL DISEASE

The increasing explosion of drug consumption has led to several studies of treatment of GERD in the UK,³⁰⁻³² Canada³³ and the US.³⁴⁻³⁶ All have confirmed the cost effectiveness of the proton pump inhibitors because of the superior symptom relief and greatly accelerated healing when compared with the H₂ receptor antagonists³⁷ or other treatments.

PEPTIC ULCER DISEASE AND H. PYLORI COLONIZATION

The risk of peptic ulcer is increased by a number of recognized factors including non-steroidal anti-inflammatory drugs, smoking, gastric hypersecretion, hypergastrinemia and the Zollinger-Ellison syndrome. However, the most important factor in the pathogenesis of peptic ulceration is infection with *Helicobacter pylori*, which is found in about 90% of cases of duodenal ulcer and causes inflammation in the gastric mucosa and areas of duodenal gastric metaplasia.¹⁻³ *H. pylori* infection is also found commonly in gastric diverticula, although the incidence is lower than with duodenal ulcer at 70-90%.⁴⁻⁶ When NSAID ingestion is positively excluded, *H. pylori* infection accounts for almost all the cases. It remains to be determined from carefully designed and conducted prospective studies whether gastric infection with *H. pylori* increases the risk of mucosal damage from NSAIDs. The importance of *Helicobacter pylori* as the most crucial factor in duodenal ulcerogenesis is emphasized by the numerous studies which confirm that successful treatment of the infection is associated with an almost 100% recurrence of ulceration.⁷⁻¹⁰

MECHANISMS OF MUCOSAL DAMAGE AND ULCEROGENESIS

Helicobacter pylori colonizes only gastric epithelium and mucosal damage results from both local and bacterial factors. Little is known about the differences in the immunological response between individuals, but *H. pylori* binds preferentially to Lewis' antigen expressed by epithelial cells, which may explain in part the known association of duodenal ulcer with blood group O. An increased propensity to ulceration is also seen in patients with certain HLA DQ β allele frequencies.¹¹

Bacterial factors important in mucosal damage and ulcerogenesis include the production by the organism of phospholipases, urease, a variety of enzymes and particularly the vacuolating cytotoxin (vac A protein). *M. pylori* is the most potent gastric prokinetic known, is the only agent known to colonize the gastric mucus overcoat of the stomach by producing an alkaline microenvironment of ammonia around itself.¹² Phospholipases and urease may cause damage to surface epithelial cells and urease is also immunogenic and hence, gastric duodenal ulcers do not colonize, ulcers of stomach have been investigated as a route for

the development of vaccines against the organism.

Ulcer severity in association with *H. pylori* infection is related to differences in bacterial strains identified by the presence of the vac A gene which encodes for a protein of variable molecular weight between 100 and 105kD. These strains are more frequently seen in patients with peptic ulcer, chronic atrophic gastritis, gastric cancer and mucosal associated lymphoid tissue (MALT) lymphoma.¹³ However, the presence of the vac A gene is highly associated with the presence of the vac A gene and the expression of the vac A protein. Recently two further genes located near vac B and vac C have been identified and associated vac A and vac B — for previous infection of epithelium.¹⁴ These genes are very highly associated with ulcer disease and are located close to vac A in the *M. pylori* genome suggesting the presence of a pathogenicity island.

On colonization of the gastric bacterium, host reacting gastric epithelial cells. *M. pylori* incites a profound inflammatory response in which the initial signal appears to be the production of IL-1 and the subsequent cell infiltration mediated by IL-8.¹⁵ (Figure 1). The resulting influx of monocytes includes polymorphs and lymphocytes, the latter leading to the development of IgG and IgA response which has been used to develop diagnostic tests.¹⁶ The inflammatory cell infiltrate is associated with the release of a repertoire of cytokines including IL-1, IL-8 and TNF alpha. The latter may be important in initiating the release of prostaglandins and leading to the breakdown of gastric mucus.¹⁷ (Figure 2). There is an increase in basal and meal-stimulated gastric and in hist acid secretion in response to gastric refluxing gastric.¹⁸ Successful treatment of *H. pylori* infection is associated with a fall in gastric levels and of acid secretion over time.¹⁹⁻²¹ A fasting gastric acid pH of 2 to 2.5 is associated with an increase in the production and the area of duodenal gastric metaplasia.²² Since *H. pylori* colonizes only gastric surface cells, the presence of duodenal gastric metaplasia, primary colonization of the duodenum and subsequent inflammation is a key in this metaplastic process, which is also vulnerable to being penetrated by microbial enzymes. The relative risk of developing a duodenal ulcer is increased in over 80 when duodenal gastric metaplasia is colonized with *H. pylori*.²³

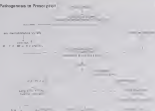


Figure 2. Hierarchy of flow chart illustrating the relationship between host characteristics, pathogen characteristics, and the emergence of disease.

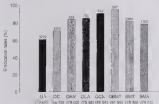


Figure 3. Mean virulence of eight isolates of *Wuchereria bancrofti* with commonly used genotypes. Q = equatorial, C = central, A = Andamanian, N = northwestern, B = southern, M = Myanmar, G = Gambia, B = Benin, A = Africa. Numbers on the top of each bar are virulence of parasite measured in percent (0-100%).

TREATMENT OF DUODENAL ULCER

Decided ulcer treatment was revolutionized by the development of the H₂-receptor antagonists¹² and much of this work was undertaken at RNM during in the 1970s when the application of new therapies for peptic ulcer disease and gastric disorders using histidine fibre optic endoscopy completely changed our traditional approaches to diagnosis.

Acid suppression has represented a radical approach to the treatment based on our experience with surgery and with placebo treated agents which suppress acid secretion. Studies from our group and others have demonstrated the importance of the highly significant relationship between acid suppression and the healing of duodenal ulcer.¹³ Moreover this was related to them that a plasma, compared agent could maintain gastrin levels, pH above 5 for 24-30 hours of the 24 ulcer healing would be predicted to ~ 800%.¹⁴ Acid-suppress therapy is still appropriate for patients with duodenal ulcer since this provides rapid symptom relief and ulceration, ulcer healing. With ulcer alone rapidly when proton pump inhibitors are used rather than H₂-receptor antagonists. Numerous clinical trials confirm this superiority in both duodenal and gastric ulcer disease.¹⁵⁻¹⁷ Moreover, healing and symptoms relief occurs faster.¹⁸⁻²⁰

However, it is the treatment of a cure of peptic ulcer through cure of *H. pylori* infection that has changed us dramatically our approach to therapy. The development of treatment has not been once since the organism has continued a factor which is particularly challenging for the best therapeutic option and to effect successful antimicrobial therapy.²¹

Monotherapy for *H. pylori* infection are contraindicated from dual therapies with the exception of a proton pump inhibitor combined with clarithromycin are predictably effective.²² Thus most current therapies are based on three agents for use in two levels.

The most established treatment is based on bismuth combined with metronidazole and tetracycline which has an overall cure rate of 85% in our most recent meta analysis involving 3088 patients.²³ It is important to appreciate that when eradication is achieved in the regimen for tetracycline, the resistance rate tends to fall (79-85%) (Figure 2). This regimen, while effective, needs to be taken for two weeks and is dependent on the persistence of primary resistance to metronidazole and

also to compliance when cure rates fall off markedly.^{24,25}

Since the principal outcome for the cure of *H. pylori* infection has been peptic ulceration,²⁶ it was natural to consider an alternative drug with the same effect on the ulcer. This has led the added advantage of continuing the clarithromycin and preserving the activity of acid inhibits antimicrobials.²⁷ Moreover, there is evidence that the proton pump inhibitors are also bactericidal for *H. pylori*.²⁸

Dual therapies based on a proton pump inhibitor plus an antibiotic are given for two weeks. Early results with metronidazole and amoxicillin were encouraging but they had been marked variability in the results²⁹ which made us that the efficacy is very much affected by the dose of amoxicillin, the duration of therapy and timing. A recent meta-analysis shows an overall eradication rate of 84%.³⁰ In contrast clarithromycin and clarithromycin in regimen trials is significantly superior to 71% eradication overall³¹ with the UK multicentre study achieving 83% eradication³² and a North American study achieving 71%.³³ Higher rates of cure have been achieved in a number of studies based on a proton pump inhibitor and two antibiotics. Clarithromycin or lansoprazole have been combined with metronidazole and clarithromycin or amoxicillin³⁴⁻³⁶ and results with one with tetracycline have achieved *H. pylori* infection at 81-96%. These high cure rates currently represent the gold standard for treatment of *H. pylori* infection and can be achieved with relatively lower doses and shorter duration of treatment. High cure rates are important to achieve since the patient who fails to eradicate the infection is likely to harbour resistant organisms if they were treated with a metronidazole or amoxicillin. In the future it is likely that there will be further refinements of these regimens and success with a four day treatment with a PPI and bismuth triple therapy has been reported.³⁷ In the event of failure to eradicate the infection a further course of therapy with a regimen that avoids metronidazole or clarithromycin if they were included in the initial therapy is probably improved. Some investigators have used a PPI plus clarithromycin triple therapy when the eradication of the PPI appears to help overcome the metronidazole resistance (Figure 3). The pooled eradication rate from one trial with clarithromycin of 80% patients for this quadruple therapy is 94.5%.³⁸ However, larger well-designed trials centre trials are needed to confirm the effect.

CURE OF HELICOBACTER PYLORI INFECTION

Cure of *M. pylori* infection requires essentially a cure of duodenal ulcer disease. In a meta-analysis of nine studies involving 126 patients with duodenal ulcer, cure rates of ulcer was 80% in 77% of those who *M. pylori* infection persisted compared with 37% in those in whom the infection was determined to be eradicated 4 or 6 weeks after the end of therapy.¹ Other studies indicate that this difference persists far up to the eight years that patients have been followed. Moreover, the rate of recurrence in studies that involve cures falls after the end of the first year to less than 1.5%.²⁻⁴ However, this might be higher in less developed countries.

HELICOBACTER PYLORI AND COMPLICATED PEPTIC ULCER

Helicobacter pylori infection is also found in association with ulcers that bleed. The association is lower with respect to the overall prevalence of infection and this is probably accounted for by the widespread use of NSAIDs in various countries and their propensity to cause ulcer bleeding. There are now several studies which show that treatment of *M. pylori* infection virtually eliminates the risk of bleeding from peptic ulcer which remains at 50 to 60% in those in whom *M. pylori* infection persists, although reduced to 10% with long-term maintenance therapy with an H₂ receptor antagonist.⁵⁻¹²

COST EFFECTIVENESS OF PEPTIC ULCER MANAGEMENT

The advances in the treatment of peptic ulcer disease over the past 25 years have been dramatic and have been estimated cost optimally beneficial to eye, ophthalmology and patient quality of life.¹³ This has also been true for the Royal Navy with the introduction of secretin (Sigenon) by therapeutic endoscopy,¹⁴ the introduction to the end of ulcer disease maintenance therapy, or the reduction of surgery and its associated conservatism.¹⁵ The further advances that have taken place in more recent years with the introduction of the proton pump inhibitors which have provided the first, really effective medical therapy for gastroesophageal reflux disease and the effective cure of ulcer disease by the treatment of *Helicobacter pylori* infection will further reduce costs and improve quality of life while keeping highly trained and skilled personnel in full command of therapy.

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An Overview of Femoral Intramedullary Nailing

G. E. D. Howell

INTRODUCTION

Femoral intramedullary nailing has been practical for more than one hundred years and is an attractive mode of treatment for long bone fractures, especially those of the diaphysis. It is however a bit complicated too. An infection rate of 5% and non union rate (2-5%) for closed nailing, compared with 10% for those of open reduction and internal fixation (ORIF) (infection rate 5% and non union 1-5%). This paper will outline the development of intramedullary nailing and discuss the biochemistry involved. From the initial unreamed short nails to reamed long nails and the recent advent of unreamed nailing.

HISTORY

The first attempt at intramedullary nailing was by Hodge in 1874 using short ivory pins and long bone diaphyseal fractures. The fracture was opened, the pin started into the proximal fragment and the distal fragment reduced onto it. The results were poor. There was a high incidence of infection and also non union. Healing was complicated by reaction of the distal fragment as well as valgus and varus deformity at the fracture site. The concept fell into disrepute. Thirty five years later interest was rekindled by Lillieberg (and May Gervay both of whom tried short metallic implants inserted in a similar manner, the leg being immobilized in a long cast. Results were most encouraging. Infection was reduced and the complications of proximal varus and valgus deformity were diminished.

The following year the first major advance was made. May Gervay developed long metallic nails for use in patients with femoral shaft fractures. These were introduced retrogradely through the fracture into the proximal fragment and closed through the greater trochanter. The fracture was

then reduced and the nail advanced across the fracture into the distal fragment to sit in the femoral condyles.

In 1915 Roy Green advocated the use of fluoroscopy to screen fracture reduction and nail placement.

In Germany in the late 1930s, Kasser developed a V shaped nail to be used in femoral fractures. It was inserted under roentgenographic control through the greater trochanter just distal to the distal canal and advanced across the fracture site. The results were impressive in what had by then catastrophic injuries arising from the pressures of war. The modern era of femoral intramedullary nailing had commenced.

In the late 1940s Kasser reported the use of the Kasser nail whilst allowing access to be placed proximally and distally through the nail into the femoral canals in general situations of the distal fragment which had compromised his previous V nail. Kasser in 1953 coined the phrase 'Intramedullary nail locking nail' when describing Kasser's work.

Femoral intramedullary nails are of three types:

1. **Candy cane nails** — these are flexible and are placed from the femoral condyles proximally across the fracture to end in the proximal metaphysis. They are inserted unreamed and rely on their point fixation to maintain fracture position (e.g. Enders nail). It is a technically demanding procedure and results demonstrate significant complications of distal nail shortening and distal fragment rotation.
2. **Canal reamed nails** — these are long rods which may be closed (distal or follow or open locked). Usually all these nails were of a constant diameter however nails with distal canal (distal or variable diameter) non-reamed profiles have been developed. These are inserted through the greater trochanter and passed proximally across the fracture into the distal metaphyseal region AND reamed and unreamed. Green Knapp Russell Taylor.

Gregory (University of Cambridge) is currently associated in the British Orthopaedic Centre, Washington, D.C.

3. **Cylindrical** — these rails are passed into the medallary canal from ground (via the counter mechanism) to dead across the frame rate and have design features which allow the passage of screw-downs (Zickel, Russell Taylor) or tubes (AGC) vertically into the formed rail. These rails have been developed specifically for use in the management of subseacone hoists or are considered as rails which are too hard to bend.

Hoisting techniques were advanced by the use of locking which can be subject to a fixed load during the progressive period or, alternatively, to the forward count and theoretically shortening or preventing the dynamic (fixed) load during the progressive period is transmitted to the formed rail, but the constant count rule. This allows compression of the frame and allows the rail to move previously within the medallary canal, shortening results. Both techniques, however, require fixed-point systems which place the point of load or stress through the formed count and the intermediate rail which are introduced under subseacone control through systems in the ship. Current rails have had to overcome the need for further stress recovery by employing dead locking, stops which are cranked open from within the rail by means of a screw at the proximal end of the rail or a. Derby lock or by having multiple rods inserted as a handle from proximal to distal across the frame. The handle is then opened and the rods, which were previously under tension spring out into the distal medallary (c). **Medallary rail**.

It is obvious that rail design has progressed significantly since the initial early days of steam. All claim forms have a) compatibility with the fixed and intermediate mechanical or load advantages over competitors, however there is no universal rail that will fit all formed medallary canals that can be applied in all formed frames. These factors must be considered when selecting the type of rail to be used in each specific situation.

BIOMECHANICS

The requirement for ease of insertion of a rail into a long bore reduces the rail's progressive effectiveness. The force components primarily axial and rotational and are generated by the rail's rigidity to longitudinal and cross-sectional planes. These forces are maximal at the time of insertion and during progressive load bearing.



Figure 1. Axial rigidity.

Axial Rigidity — this is the force required to bend a rail using an length and it is proportional to the cube of the diameter of a tube of constant diameter. As the force acts along a point it is a moment and is measured in Newton Metres (Nm). Figure 1 compares the forces required to bend open and closed rails of varying diameter. It is more difficult to bend a closed rail than an open one of any fixed diameter. This axial rigidity is transmitted to the frame as an axial stress which increases which if of sufficient magnitude will distort the frame.

Early rails were made of materials with high stiffness and could therefore bend relatively easily under axial load. However, this therefore added that load-bearing and rotational was complicated by bending of the rail and therefore such loads of rail stress. Later rails were made of materials like (steel) or (aluminum) under axial load (which made materials more expensive) but allowed greater weight bearing progressively.

Closed rails (a) used or (b) used a made of materials which were deformation were highly advanced with the introduction of means which could a passage for the rail within the canal. The rails generally had a radius of curvature greater than that of the formed intermediate canal (up to 1.5 times) and in the multiple use for between closed rails and the closed center canal and vertical beam. The method reduced axial stress produced during insertion and therefore hoop stresses in walls and allowed greater axial load to be applied during early use (progressive mechanism).

Modern rails are made of materials which are deformation (a) (steel) and (b) (aluminum) and are open or closed. The latter have an even greater axial rigidity. They have, however, a radius of curvature smaller than that of the

second canal and once introduced through the correct insertion point will follow more closely the radius of curvature of the femoral intramedullary canal. Sharp corners are therefore few. One exception to the ideal point of insertion occurs when there is a requirement to insert screws or nails and the femoral neck, through the nail. For the extended use the insertion point must be slightly anterior of the ideal point.

During the post-operative period when mobilisation is undertaken, the nail transmits longitudinal forces across the fracture, there are no bending moments about the axis of insertion. The force applied may reach 1700N for a 100kg extended during normal walking. High axial rigidity is therefore required to prevent nail failure.

Torsional rigidity — This is the ability to withstand rotation about the longitudinal axis of the nail. It is directly proportional to the fourth power of the nail's gross external radius and is especially important when the nail is locked. If the rigidity is low the distal fracture fragments may rotate. It is therefore important to have a nail of high torsional rigidity. An approach will reduce this rigidity by a factor of five or six. Figure 2 demonstrates this for nails of varying diameter.

Other factors

- Curvature of the nail. If a straight nail is introduced into a strongly curvilinear canal then the requirement to bend the nail, so fit the canal, is not required. The intramedullary canal of the femur is curved (average 1.53 metres). Early nails were straight and in order to pass down the canal the nail was subjected to a bending force. As stated this force will



Figure 2 Torsional rigidity



Figure 3 Working length

be transmitted to the cortex as a radial force (sharp corner). This did not occur frequently in practice as the working length of the fracture (the distance between end points above and below the fracture where the nail propagates stress (Figure 3) acted as a stress absorber, the longer the working length (fracture length) the less likely was the chance of large radial forces being produced.

There is thus here a compromise for a nail that will deform to the radius of curvature of the intramedullary canal during insertion whilst being sufficiently rigid to withstand high bending moments during postoperative load bearing. It should be noted that vertical load bearing into the formation of callus.

- Cross section of the nail. Very few nail designs have been developed. Classically hollow or open nails do not meet intramedullary pressure during insertion or much in situ with all of the same diameter. Nails in various use include a variety of cylindrical, cleverised, triangular and fluted cross sections and all may be hollow or solid, open or closed.
- Nail rigidity. If the inherent strength of the bone is reduced due to disease osteoporosis, metastatic bone disease or systemic disease (the forces imposed required to fracture the bone are reduced).

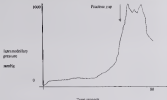


Figure 4. Intrauterine pressure maintained, about during 12-hour period.

- d. **Incremental.** If the peak of pressure during the curve of the mold away from the vertex curve of the craniocaudal canal then the tip of the mold starts upon the vertex during insertion. Large hoop stresses will be produced with subsequent risk of displacement fracture.

With modern molds where the index of curvature is similar to that of the craniocaudal canal it is particularly important when creating proximal and distal displaced fractures. Anteroposterior or coronal plane deformities could easily be produced when introducing the mold across the fracture due to a small or large lever arm.

- e. **Resting.** This was developed to reduce the hoop stresses produced by both of values of curvature greater than that of the craniocaudal canal of the fetus during insertion thus allowing the bone to fit the mold. Resting is performed using the distal, forward curve followed by removal of increasing diameter all contained on flexion drive. During this process the center has three regions of flex. Firstly the center fits in a space within the craniocaudal canal producing a marked resistance to intrauterine pressure (Figure 4) the resultant distal flexion results and drives narrow contact into the capsule. The resulting malformations are significant.² Miller et al

have demonstrated that intrauterine pressure during resting can be reduced using hollow regions of mold in combination with surface flexible drive.³ There is no significant difference in intrauterine pressure when resting or moving in a vacuum and⁴ finally the motion of the center head is subject to flexion. The energy produced is dissipated in heat although this is unlikely to reach sufficient levels to cause thermal necrosis.⁵ Finally the center will destroy maternal blood vessels.

However, standing does produce an anisotropic bone graft which may be of benefit at the fracture site.

- f. **Make temporary fractures** including segmental fractures can be treated.
- g. **Locking.** This was introduced by Kirschner to reduce the resistance of ribcage and center consequently ligaments the locking devices were moved when locked the proximal and distal sections of the display is well in the distal end.¹ These were not rigid and had two segments with the end directly to the center of the long bone with subsequent pressure necrosis.⁶ Subsequent development showed screw-type bolts which were not rigidly fixed to the end but had a central section which expanded within a nut the bolt which did not fix the center nor the end thus allowing some movement and checked the

transmitted load. Both pass through both forward members and the nail. The thrust does not impact the nail and therefore allows slight movement. This may be obvious following the fracture or compression of the nail in units previously within the wire-meshillary canal or joint, which allows the nail to sit in axial stress the fracture. However, the former is associated with a marked shortening of the bone and vessel.¹ It is recommended that all wire-meshillary nails should be statically locked once they have not interfered with fracture healing nor result in fracture healing complications.

DISCUSSION

It is clear from the above that an nail will be exactly biomechanically compatible with every wire-meshillary canal into which it may be inserted and that the requirements of insertion differ from those of load bearing. Nail design may allow a closer match of nail and wire-meshillary canal rules for insertion and then insertion force and hoop stresses generated can be reduced to a minimum. Modern with the study of materials which have high tensile rigidity (stiffness of solid) and also a measure of resilience similar to that of the wire-meshillary canal of the bone. Smaller diameter wires can therefore be employed and if inserted in the correct line of alignment of the bone will give through wire-meshillary canal closer to an exact thread, allowing the nail to sit during the internal diameter of the wire-meshillary canal by resting. Late structural vessel damage occurs and this is thought to be fracture healing, with early union. Embolic events remain a cause for concern particularly in the polymeric group.

The ideal nail should be easily inserted and have a radius of curvature the same as that of the forward wire-meshillary canal into which it is being inserted and thus, if inserted in a joint, which is the purpose of the radius of curvature of the wire-meshillary canal of the bone product inserted hoop stress is shielded from high axial and rotational rigidity to allow early load bearing and have the ability to permit

rotation or shortening of a fractured bone by use of easily inserted bolts.

As present the use of blades or wires placed through the lateral proximal cortex, through the nail and into the tibial shaft can lead to subcutaneous fractures; debris from the biomechanically shield negatively in long wire-meshillary nails in the past of insertion has appeared in the proximal distal radius of curvature, however this does not appear to affect clinical progress in union.

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Case Report

Acute compartment syndrome complicating Colles' fracture

P. E. Hewson

Abstract

Colles' fracture is a common injury and has a typically high-energetic mechanism. Compartment syndrome is a rare complication but clinical signs of compartment may be masked in the initial post-injury and pre-reduction periods.

INTRODUCTION

Colles' fracture is common in all age groups and is the most common fracture in the elderly. Compartment syndrome, both flexor and dorsal radialis, have been reported as up to 10% of cases.¹ A case is reported of compartment syndrome associated with Colles' fracture.

CASE REPORT

A 70-year-old male nurse fell while working. When seen one hour post injury he had an obvious dorsal limb deformity of the wrist with raised dorsal pulse and tenderness. X-ray demonstrated an extra-articular fracture of the distal radius with 40 degrees of dorsal angulation.

He was admitted to hospital. While waiting manipulation of his fracture, some two hours following the injury, he developed markedly increasing pain in the flexor compartment at first, forearm over a period of 70 minutes, with numbness in the median nerve distribution and severe passive passive finger extension leading to a diagnosis of acute compartment syndrome with secondary radial nerve syndrome.

An open fasciotomy incision was made palmar to the wrist and the flexor compartment held with a simple X-ray through the radial styloid. Through a volar forearm incision a full

flexor and radial nerve decompression was performed, releasing significant muscular compartments immediately. The skin was closed over the radial nerve only. The following morning there was complete resolution of symptoms.

The skin was closed on day one and he made an unremarkable and complete recovery.

DISCUSSION

Compartment syndrome is a rare complication reported as occurring in less than 1% of cases of Colles' fracture and can occur in both the flexor and hand. Compartment factors include high-energy, volar-dorsal, severe bone and soft tissue injury, intra-articular fracture and fracture displacement. Post-reduction angulation may also contribute, mostly by the effect of excessive wrist and elbow flexion on venous return and distal flow of compartment drainage. This has been shown to increase intra-compartmental pressure to as much as 110mmHg. The diagnosis is made from 15-90 hours post injury in closed extremities.²

The flexor and dorsal muscle compartments and the hand have 10 separate compartments. Raised pressure may occur in any of these individual compartments following distal radius fracture. The clinical features suggest that many acute compartmental pressures require post-decompression to the injury, painless, involved muscle masses and severe pain on passive stretch of these muscles. Compartment syndrome in the forearm most commonly involves the volar compartments with associated distal paraesthesia. The peripheral pulses will not be affected in this as essentially a venous phenomenon. An ill clinical picture is usually observed necessitating of intra-compartmental pressure is rarely necessary.

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Prosthetic bracing is required in order to break the vicious cycle of abnormal odours and persistent refluxes.

The duod to be distinguished from acute caecal transit syndrome following Colles' fracture, due to the close proximity of the pylorus curve to the duod index and its confinement within the caecal loop.¹ Reports of ischaemia range from 0.2 to 10%¹⁻³ and are more usually a secondary phenomenon although an acute rise in caecal blood pressure has been demonstrated following fracture of the duod, index.⁴

ACKNOWLEDGMENTS

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Research

A Review of Gulf War Illness

W. J. Colver CBE

INTRODUCTION

Approximately 50 000 British troops deployed to the Gulf region in the build-up to and during the Gulf War 1990-1991. The war was fought on 16 January 1991 and was followed 36 days later by a ground war lasting five days. Combat casualties were far fewer than anticipated and the incidence of non battle injuries and disease was much lower in comparison with other military campaigns.¹ The conflict was characterised however by the widely recognised threat of the use of chemical and biological weapons by Iraq in response to the threat of massive coalition firepower and countermeasures had been made.²

Following their return from the Gulf region although the vast majority of symptoms remained mild and for the first 6 months of veterans began to report a variety of symptoms with varying degrees of disability. Initially people talked of 'Desert Storm Fever' but later the pattern and variety of illness became known as 'Gulf War Syndrome'. In response to these medical complaints by Gulf veterans some of whom were still serving in October 1993 the Ministry of Defence set up the Medical Assistance Programme (MAP). This paper will describe the assistance programme, detail its current findings and discuss the various current hypotheses which have been advanced to explain the phenomenon of 'Gulf War Syndrome'.

THE MEDICAL ASSISTANCE PROGRAMME (MAP)

This is a clinical programme designed to look at individual veterans who put forward an

argument for assistance. It attempts as much a diagnosis where this is possible and then to refer for further treatment, either back to the NHS or the use of veterans no longer serving, or to the appropriate primary medical facility in the case of serving personnel. All clinical assessments are conducted by serving consultants in internal medicine. As the population is self-selected, the MAP cannot answer epidemiological questions about the incidence of morbidity in Gulf War veterans. It is likely however that if veterans are experiencing a serious and relatively common new illness, then this will be identified.

An early clinical assessment, clinical history taking as if of normal competence and in the MAP a careful military history with details of tactical posture is necessary. Service in Northern Ireland and The Falklands may have caused a brief PTSD which could have been triggered by events in the Gulf. Details of Gulf War service are taken and particular reference is made to any occupational hazards such as exposure to media personnel etc. We also ask about the taking of psychotropic drugs before, during (MAPS) and afterwards involved. Clinical assessment is carried out with particular emphasis on the body systems suggested by the pattern of symptoms. To the question 'What tests are carried out in the MAP?' the answer is 'Any tests necessary in order to make a diagnosis'. This assessment involves hospital admission or referral to another specialty. Blood and urinalysis tests are outlined in Table 1.

Intally psychological screening was carried out on all veterans coming forward for assessment, however for logistic reasons this is now confined to those still serving. If a veteran no longer serving is left to require psychological assistance he or she is referred back to their GP with the recommendation that an investigation and treatment are also done through the good offices of the Combat Stress Association.

Colver Captain Colver is head of the Gulf War Veterans Medical Assistance Programme and is employed in Clinical Medical Entomology, MAP, Royal House.

Table 1 Clinical assessment programme

Patient Questionnaire	
History	Urinalysis
General Examination	Urea Creatinine Electro GFR
ECG with different WBC and ESR	Serum electrophoresis
LFTs TPTs Immunoglobulins	C-reactive protein Mould sugar
Serum Ca and Phosphate	ECG Venography
COP U/S Abdominal area	
Serology for	
Hepatitis A B and C	Psychological assessment
Enteroviral screen	Computer clinician administered PTSD scale
Lyme disease	Beck's Depression Inventory
Mucic acid mucinase and sialidase	General Health Questionnaire
EB virus serology	Psychophysiological Testing
Antinuclear Ab's	Where identified as positive for psychiatric disorder will be offered an appointment with a specialist psychiatrist
Lead/mercury/BAT	
Smearly Fever	
Cerebral Phase II GPT	
Cytomegalovirus LFT	

All patients are offered follow up appointment to discuss the results of assessment. Many decline because they find a considerable demand from the assessment centre. However, a small but useful and well defined subpopulation. All requests still waiting are followed up regularly in major progress. Follow up for those who decline a further appointment is by means of a letter to the patient's GP.

To date (31 June 1996) a total of 1,026 veterans has returned for assessment and of these 402 have completed the programme. Detailed analysis has been performed on 384 of these veterans.

PATTERNS OF ILLNESS IDENTIFIED

Such is the wide range of illness noted it helped to look at the results in several ways. The first

of these is to divide them into five main groups:

- Major Physical Illness
- Minor Physical Illness
- Post Traumatic Stress Disorder (PTSD)
- Other Psychiatric Conditions
- Chronic Fatigue Syndrome (CFS)

Those veterans in whom a chronic diagnosis cannot be made are allocated to a separate group due to unexplained illness which ICD-9 categorises as 'symptoms and ill-defined conditions' (580DC). This is an extremely large category group of often vague but common symptoms in which no objective clinical or laboratory findings are noted. It is possible that this group may include patients in whom heretofore they make a specific diagnosis possible. The group of unexplained illness should not be taken as evidence for the existence of a mystery illness or disorder. Gulf War syndrome. Many general medical practices attending returning veterans will have no specific diagnosis. Following consultation and investigation.

A total of 184 veterans, presenting for assessment, were of whom 166 actually will were given a total of 402 diagnoses. 186 patients had more than one diagnosis, with 89 patients having two diagnoses. 23 patients having three diagnoses and one patient recording five separate diagnoses. Using the above classification, the results obtained in the group analysed are shown in Table 2.

Table 2 Total Diagnoses in 284 UK Gulf War veterans

Major Physical Illness	108
Psychiatric Illness	78
PTSD	82
Chronic Fatigue Syndrome	28
Minor Physical Illness	38
Unexplained Symptoms (580DC)	35
Went	3

Table 3. Frequency distribution of physical diagnoses in UK Gulf War Veterans by ICD-9 coding

Diagnostic group	ICD 9	Frequency
Infectious Diseases	601-139	1%
Neoplasms	140-239	1%
Endocrine	240-279	1%
Psychological conditions	280-319	38%
Nervous System	320-369	8%
Circulatory System	380-449	3%
Respiratory System	460-519	8%
Digestive System	520-579	2%
Genitourinary System	580-629	2%
Skin and Subcut. Tissue	680-729	8%
Musculoskeletal System and Connective Tissue	710-799	8%
DDDC & CTS	760-789	14%

Major physical illness is defined as conditions which are either self-limiting, or easily managed and which pose no serious threat to life or health, major physical illness includes conditions which pose a serious threat to life and health. Examples of the former group include conditions such as stroke, heart disease, diabetes, rheumatic diseases, and musculoskeletal disorders. The latter group of serious illness includes conditions such as myocardial infarction, cerebrovascular, inflammatory bowel disease, various leukemias, lymphomas and other solid tumours.

Another method of analysing these data is to use the ICD-9 group coding for infectious disease, neoplasms and major body systems. The data analysed by ICD-9 coding is shown in Table 3.

PSYCHOLOGICAL ILLNESS

It can be seen from Table 2 that psychiatric

conditions account for just over one third of all Gulf War illness, with post-traumatic stress disorder (PTSD) constituting in almost one half of all psychiatric conditions. Psychiatric conditions are broken down into specific diagnostic groups in Table 4.

All cases of PTSD were attributable to Gulf War service, although in six cases preceding service either in Northern Ireland or The Falklands had played an important role in exposure. Lifetime depressive illness and adjustment disorders also seemed to be triggered by Gulf service, although half of these cases had not the army clearly after the Gulf War and the adjustment to civilian life may also have played a part in the onset of the illness. As far as the onset of PTSD is concerned, it does seem from this group that patients do not necessarily require to experience a life-threatening event themselves or to witness it in others, in order to develop PTSD.

SERIOUS PHYSICAL ILLNESS

The majority of cases with serious physical illness had been diagnosed before they attended the HAF. They needed to report their condition and to ask whether their condition had been caused by service in the Gulf. We did identify one case of melanoma, breast disease in an ex-soldier with nothing to his name, and an abnormal ECG, he has subsequently had angiography. We have also diagnosed hypothyroidism in a former soldier who has never become symptom free on replacement therapy.

Table 4. Psychiatric diagnosis

PTSD	45
Depression	49
Adjustment reaction	10
Anxiety state	7
Subsidiary	5
Alcohol abuse	3
Drug abuse	2
Bipolar depression psychosis	1
Antisocial disorder	1

Table 5 Most frequent complaints among 204 British Gulf War veterans

Tiredness	85%
Muscle and Joint Pain	75%
Anxiety	75%
Sleep Disturbance	75%
Short Term Memory Loss	60%
Headaches	51%
Skin Problems	48%
Tingling in Limbs	41%

CPS and SSIDG

The group comprising 'symptoms signs and defined conditions and chronic fatigue syndrome' (CPS) make up the second largest presenting group after psychological conditions. A president of Gulf War illness has many of the features of chronic fatigue and some of these patients are severely debilitated and unable to work or even manage household tasks. This group present the greatest problems because chronic fatigue is an ill understood and controversial condition. There is no known cause and fatigue syndrome should not be used. It is within this group that diagnoses such as Multiple Chemical Sensitivity Syndrome and Toxic Allergy Syndrome will be made by other practitioners who may see Gulf veterans.

Whilst some veterans in this group are severely debilitated others have minimal symptoms and are able to work full time. Symptoms are not limited to one organ system and there is no characteristic rash, fever or sustained laboratory finding in this group. It is the clinical judgement of the author that veterans in this group on both sides of the Atlantic have a similar clinical feel.

The persistence of CPS is the greatest population concern and so determine whether this condition is best represented as those who are never up the Gulf will be especially difficult. However, it is harder to estimate the prevalence. This group of patients need a great deal of support with their illness and in the time of acute pain when they are still working, a period in the Rehabilitation Unit at Headley Court has been very useful. However, an expensive behavioural approach to treatment has been used, but this is a little threatening and expensive method of treatment.

ANALYSIS OF SYMPTOMS

A striking characteristic of many veterans

attending the M&P is the multiplicity of their symptoms. The most commonly occurring symptoms are as detailed below.

Fatigue

Although fatigue is the commonest symptom occurring in over half of all veterans seen, only a minority with the symptoms meet the criteria for a diagnosis of Chronic Fatigue Syndrome. In general population surveys the incidence of fatigue has been variously estimated, but has been reported as high as 10% in a randomly screened population.

Musculoskeletal disorders

These disorders are common in any random population, particularly those with low back problems. Although 60% complained of muscle and joint pain, in only a small group of these patients was it possible to diagnose a specific disorder.

Irritability

The high incidence of irritability reflects the one third of all veterans amongst whom evidence of psychiatric disorder. Chronic pain and discomfort can both cause irritability, as can sleep disturbance, another common symptom of veterans. Sleep disturbance can sometimes be due to sleep apnoea and several veterans have been referred for sleep studies. There are hardly carried out in the UK and some subjects with unexplained illness may in fact have sleep apnoea.

Memory loss

Complaints of short-term memory deficits are common, although on strict questioning many patients deny any problems resulting from this deficit. It is usually of the type: 'I never remember to bring something and when I go home I wonder I remember what I was I had at lunch. I have not seen any veterans who had a cognitive deficit in association with the memory impairment. Many veterans with memory impairment have had MRI brain scans and of these have been normal. Memory impairment is of course often associated with depression, anxiety and PTSD, in addition to other non-neurological medical conditions.

Headaches

Headaches are frequently complained of when in association with tingling in the limbs. It

represenly disease is excluded as their presence then a diagnosis of hyper-sensitization should be considered. This condition often responds well to advice about the control of breathing.

HYPOTHESES TO EXPLAIN GULF WAR BLINDNESS

There has been no shortage of hypotheses to explain the illness seen in Gulf War veterans. Environmental factors have been considered. For there is no doubt that many troops were exposed to chemicals and hostile desert environments with extremes of temperature, dust and heat. The popular misconception of a 'hot dip war' may have led to the trade for troops away from home for many months unaware of their return. The vast amount of dust of battlefield and chemical attack, with the need to get in and out of individual Protective Equipment with its resulting physiological degradation, must have imposed constant physical and mental stress on personnel.

Strokes from all well first was a hazard mentioned by many troops, although US studies suggest minimal stroke risk from the illness.¹¹ The use of pyrethroids, known to aggravate preexisting thrombotic-related disease about which long term effects. This drug has been used in medical practice since the 1950s in very much larger doses than those used as pesticides. If there were long term effects transmitted upon us war, it is very likely that there would have been noted by now. During Gulf deployment there was also widespread use of a whole range of agents such as DEET (disruptor of peripheral metabolism pathway), insecticides, pyrethroids etc. It has been suggested that there again, perhaps in combination with pyrethroids might have given rise to neurological effects. There could appear to necessary have several changes: improved performance and vigilability. However, this would expect more effects to occur around the time of exposure and then improve with time. Delayed and long term effects as reported by some veterans would be an unusual manifestation of toxicity. Delayed and long term nerve effects have to be not been substantiated by research on any groups of veterans.

Another line of confusion involves the possibility that they may have used chemical weapons of that sort; again, may have been released by allied bombing of Iraqi facilities. Many doctors have doctors believed during the war that the result that many believed they were

under chemical attack. This occurred because the doctors were extremely sensitive and this sensitivity had only been observed in the exposure of some specificity. There is no documented long use of chemical weapons. The suggestion that burning Iraq facilities could have released agents which have caused many nerve disorders causing long term damage but no acute effects, is discounted by both clinical notes and personal experience.¹²

There is one class of viruses which is unique to service in the Gulf and that is the human herpes lymphocytosis. The US troops noted 31 cases of lymphocytosis in total and of these, 13 cases were of the previously unrecognized 'monoclonal form'. All these cases were identified within 18 months of return from the Gulf and it had demonstrated either on clinical examination or on laboratory testing. This condition does however result in this new disease do appear from time to time and that we should always be aware of this possibility. Human herpes 8, the potential cause of Kaposi's sarcoma, although the MAF has diagnosed several cases of this disease and one case of lymphocytosis associated with it, no small viruses have been identified as having any form of lymphocytosis.

The vaccination programme is sometimes held to be responsible for Gulf illness so that it may have produced chronic fatigue and debility when various vaccines were given over a relatively short time. This idea is not supported by follow-up studies of US military recruits and laboratory workers, both of which groups have received multiple vaccinations over a relatively short time period.¹³

CONCLUSION

The self selected group of veterans seen on the MAF has a variety of illness, some of which is due to Gulf War service, as PTSD, some of which may be related to Gulf War service eg bronchial asthma, and some which is not related to Gulf War service. An example of illness, in this latter group would be the appearance of a lymphoma incident within a few months of returning from the Gulf. We know from medical education studies that tumours begin long before they are clinically detectable and in some unfortunate veterans this developed tumours after they return from the Gulf, cannot make any small time, started some time prior to deployment.

From our small database it would not appear that there is a unique cluster of symptoms which would suggest a new pattern of illness as

reference. I have demonstrated above that some symptoms are common to many veterans but these symptoms are common in any population and do not necessarily indicate underlying disease. We learn from the a-forthright of other conflicts that veterans tend to report more symptoms and "ill health" although few differences between them and control populations are found on examination.

It is extremely unlikely that such a wide range of illness as that described above could be due to a single cause, even if that single cause was a combination of factors. Thus while care is made more difficult by the responsibility of establishing a single case definition for Gulf War illness. US studies which have now involved more than 27 000 veterans have concluded that "a single coherent syndrome cannot be defined, even though many diseases reported by veterans might be attributable to Gulf War service. In April 1988 the National Institute of Health Workshop Panel found that no single disease or syndrome was apparent, but found multiple illnesses, with overlapping symptoms and signs."

It is apparent, even from these preliminary data, that the wide range of illnesses described above were not suggested by exposure to a single agent. Nor in most cases, does it so evidence of any such exposure. In many cases, where an exposure is claimed the symptoms and signs do not match the diagnostic criteria for such an exposure. The non-specific multi-system nature of many illnesses, symptoms compatible with many of the manifestations of psychological stress and I would suggest that not only is this exposure as well defined conditions such as PTSD, but is an important etiological factor in a great deal of the less well-defined illness found in veterans.

FUTURE PROGRESS

The analysis of the WMAP findings to date indicates a wide range of varying symptoms and illnesses with no unique factors identified. There is a high on almost of psychological illness, although this is not surprising following such a conflict as the Gulf War. The WMAP questions on whether symptoms from other illnesses is increased in Gulf veterans. Epidemiological studies are being planned to answer this question. These studies are done on the basis of the WMAP and we hope that working in these fields will be able to make links one of the WMAP database. We also plan to compare our data with other data sets such as

databases held by Defence Analytical Services Agency.

Finally the WMAP raises the question of health surveillance following any future conflict. A major lesson learned has been the importance of good record keeping, not only with regard to illness suffered in war but exposure to any environmental or occupational hazards. During future conflicts we will need to know the location of individuals at any time in order to designate these sort of exposures. It seems that the military medical system are ideally placed to carry out the sort of post-conflict health surveillance.

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History

The threshold of a new tomorrow

R. Buckley

Being the text of his sermon given on Palm Sunday, 31 March 1986, at St Luke's Church, Royal Naval Hospital, Haslar

History is made of moments, often but not always just. On Palm Sunday, 31 March 1986, on the eve of its twenty-seventh birthday, the Admiralty Theological Division, Royal Naval Staff Chaplain to Fleet Officer Stephen Whitley, preached at the Royal Naval Hospital Haslar where he had been Chaplain from 1963 to 1982 and during Operation Desert Storm and 1982. He was invited to Chaplain to the Admiralty Staff HMS Haslar, Haslar, Dorset and Haslar during the Falklands Campaign in 1982. The sermon captured the emotions of the day, the day, emphasizing the significance to the hospital and the work of the Royal Naval Medical Service and CHAPLAIN of its people their values and traditions. His words were a call to duty and prayer that would drive our men, their families and friends up to new heights of spiritual growth and new change. His official words for the day.

The sermon is published here to record the words and ideas which were given from the pulpit at Haslar that day. History.

Today has to be a day of shared emotions and some working ideas with us to learn. Firstly it is a very much a day for looking back and something all that has been a forced here at Haslar since that day in 1798 when the foundation stone of this hospital was laid and subsequently at October 1798 when the first block was opened to receive the first hundred patients. It is a day for remembering the vision of Dr Daniel Whitley who gave you clearly the vision, traditions and legacy of Community Care — the community care of sailors in the 17th century at the time of the first Dutch war. His vision of the need for a naval hospital at Portsmouth was to be implemented for over a hundred years. And with the implementation here at Haslar's Port. Knows locally at the time at Haslar Port. Whitley's vision there followed the other pioneers of Naval Medicine — Lord Sandwich, Midford. This vision

must not become a lecture on the development of the Royal Hospital. Haslar, but to be known as the Royal Naval Hospital. Haslar and to event on Tuesday, it is a new role to be brought forward to the Royal Hospital Haslar. But we do well to have to have touch with our roots of where things have come from, of the vision of history which we all are called to build upon in our own time. Being part of this living tradition will I'm sure be important and precious to many of you this morning — from the early days of your medical and nursing careers, of going off to sea to work here, to other languages and in professional training, but to come here in the presence of Haslar and in this hospital — to friends and colleagues in the families who lived in the Terrace and in Admiralty.

Today we remember that great tradition and all the many traditions. But how you stand on the threshold of a new tomorrow. Of a new and quite marked change and development of that tradition reaching back over two centuries. For from the history of Haslar and Midford, of Admiralty and Warburton of Weymouth and Haslar, something new and very different is about to begin. And if anything of value is going to emerge in the life of the new Royal Hospital Haslar it will be the thoughts and hopes of all that has gone before in these places — not represented by any one of those great traditions, certainly not by any single for supremacy in the new order of things, but by the creation of something new and very special which is new that is continuous with. And in this is the vision of Daniel Whitley was content to what was to happen here in this place, over two centuries ago, to come a new vision here as he stepped out of Haslar and transferred into what the new Royal Hospital Haslar is to be and to become.

That such a place should be developed by those who are now together in the place which will provide them with a sense of new identity and above all a renewed sense of purpose is of paramount importance. In the hospital of new work and opportunities in a world of medicine and nursing that increasingly dominated by technology, finance and market forces the familiar world of surgeons might be said to have a burning ring. Without a vision for people's health. For this hospital is not so much the wealth, the departments, the doctors, the technology, the agency and the budget — it is the people. It is those whose vocations it is to care for the sick as doctors, nurses, chaplains and other allied professions. It is the people who come here: the women and men of our Armed Forces and the people of the Queen's personal health group and still. In our fragmented society when the sense of community has been allowed to become alienated to the point of non-existence — it is perhaps in such places as hospitals and schools that people can begin once again to learn what humanity means through the sense of community of belonging together not for what one can get out of the system but instead for what can be contributed and shared for the benefit of all — providers and receivers. For as true compassion for the providers when that they too are mortals and receivers suddenly discover that apart unexpectedly they are providers.

And so the new vision that those who have found themselves here from last Tuesday will be called to form and shape: will have need to have as that of its principal business such a sense of being together as community which will convey a real and new identity and purpose for the hospital.

In the modern world of relative values in which we all find ourselves and in which we struggle to find meaning and purpose, no sense of how things might work out can begin to take shape without a shared destination. In a relationship hospital. Thinking will be known and pursued as a Moral Act.¹ This concept of Medicine as a Moral Act has to be in the heart of every single meeting of the hospital as a healing community. Advances in Embryology and in Genetic art

perhaps the more obvious indication of a need for a new medical ethic, for the process of medicine by all involved in the work of healing those who are ill — the work of healing is a job rather than a vocation with the contrast and call leads the bureaucracy and administration that can stifle the human spirit unrestrained and dedicated to care for people the industry which is the working of market forces, and specialization performance. The point, that if we seeking to emphasize in this it is little wonder that the moral dimension becomes side-lined, marginalized. And any vision of what a hospital community is and is to become has to recover the concept of medicine as a moral act, the practice of whole persons, doctors and patients, the care which is both sought and given.

We cannot allow ourselves the luxury of living in a fantasy world. We have to live in the here and now. But if we are so worried, if our minds are so busy, our deepest convictions are in fact not and how they they must be recorded, and acted thereon.

At this point you may be wondering what God is a personal source of inspiration, encouragement and strength to get things through in going to get a decision in this situation. Well, I hope you will try on reflection that God, and his will and good purposes have been righted in what I have said already. I couldn't write the posts I've already made if I didn't have the faith in the living God who is never remote from us but with us and who shares with us in the joys and sorrows, joys and disappointments and disappointments. It is perhaps to moments that we gather today in this great meeting point in the life of this place on the first day of Holy Week. It is possible to look at the events of Holy Week from the popular actions of Palm Sunday to the silence of the morning and loneliness of that early community of disciples waiting for that Lord around the supper table from the forces of temptation, doubt, despair and evil which misled the most well and gentle of the forces of the world to the horrendous the crucifixion: the not knowing where to go now of Holy Saturday. And then, the unexpected, the utterly new and exciting night promise made, and by the light of the risen Lord on the first Great morning. That a series of individual events and happenings has a common process — the process of salvation and redemption being worked out.

In all these, everything that begins there is set in motion at the time from God: the man God chose to be during the one week we now come to know as Holy

¹ The *Philosophy of Medicine in Moral Act: an Affirming Process* (Developed Reflections on Medicine, the Morality, Philosophy and the Church) Stanley Hauerwas, J. A. T. Clark, Edinburgh 1989.

If we keep Holy Week as it should be kept, it will follow closely the events, the predictions, the contradictions, the demands, the pain, the fulfilment and the self-giving love — then and only then can we really begin to understand what this week of sufferings and baptisms has begun and now life means. We need to keep Holy Week to help us become the people God wants us to be. And in becoming the people God wants us to be, to be empowered to step out from the land of life that we should be living together together in community, living for each other and not simply for ourselves. That is the Moral dimension to be recovered from the side lines, and may give of people a love in which values will be groups and experiments in society.

And hence lies the challenge: Being Human from Tuesday. From all this has been said and has led up to this moment, a new beginning

A new life lies just around the corner. A life which peace God will have as its centre, a sense of truly belonging together, a life to which we bring all its sorrows and joys, failures and disappointments of the past and allow them to be transformed into something new. A life that is about living for others, of giving and not giving. A way of life in which the Church has borne witness by its presence here for over 200 years, standing in position close to the site of the crucifixion, fourth site of Paulinus's original quadrangle. And the story rather standing parallel and separate — that what did complete our lives as individuals and as communities in the presence of the living God from whom we came and to whom we shall return and before whom we will be called to account for what he has required of us.

QARNNS recollections: Not the years condemn

R. Jane Phillips

I started nurse training as a volunteer, BSCN in 1930 aged 17, completed three years and became a qualified Staff Nurse in 1933, but not BSCN as I was only 20. In September 1935, I was accepted for general training at the Royal Hampshire County Hospital, Winchester three years on maturity of 21½, 22½ and 23½. After that I became Nurse Registrar and we were obliged to remain as staff nurses at QH for a fourth year.

These years were very happy and fulfilling, very hard work, quite a bit of playing and a very real community spirit. The Royal Hampshire County Hospital, Winchester was a voluntary hospital supported by voluntary contributions by the local population. Big donations and diverse. Voluntary Spectacles (Spectacles), Ellips. The bathroom, painting,

experience, more paid much the same sort of practice as ourselves. We were all proud of our hospital, though we feared the Museum, but she was not really a tyrant, she just was a very efficient hospital and it worked! The domestic staff, porters, etc. were a real part of the working structure.

In the early months of 1937, the nursing and probably medical staff, received a letter to tell us when if we would be prepared to join a fighting service in the event of mobilisation, breaking out. I and a friend agreed for the Naval Mining Service and were called for interview. My friend was not tall enough! No patients to visit, sitting out at that time. Finally I have been accepted for medical by training. I was asked to take the training but my name was put on the Reserve.

In February 1943, when my call up came, I had forgotten all about being on the Reserve and was taken by complete surprise.

I was then signed out of General with two of beautiful medical and/or and was subsequently reported to the Royal Naval

Mrs Phillips and her little daughter in the QARNNS Remembrance Day at the Second World War, and were later in the hospital.

Hospital at Bandar. Although we were Nursing Officers and were given Officer status, we did not hold the King's Commission, nor military privileges or pay. On the other hand, we were not subject to military discipline, only to our Majors at Chert, and our subordinates in the medical world. A man's pay was £1 10s, one of which we were required to pay whilst in the hospital. In 50 per day towards our training. My first impression of the hospital was that it was huge and wonderfully well kept apart from the fact that the waste I never changed my mind on this matter and crying around the blocks if one was on afternoon watch was quite an effect on that matter. The water on duty held the key to the drug cupboard, not many things in this place, and half always in check the drugs and used the administration.

A few weeks later my interest in the hospital, I was assigned to HMS Dolphin in this part of the health and welfare of about 40 British. The Black Bay was in Indian Ocean House in Aden. I had the help of a YAD and was under the supervision of a Medical Officer. We also ran a surgery at HMS Dolphin and I used to operate along the front between Maudslayi House and the Blue in my uniform, my large anaesthetic and kept using on a case of self. I slept on Maudslayi House and shared the W.B.M. officer's room.

My first W.B.M. or Red Cross Nurse, was a delightful person in fact. She had been a secretary company before that to becoming a member of the Voluntary Aid Detachment for war service nursing. We shared and understood about what and hopes, during our short acquaintance and enjoyed the company of each other. Whilst first intake she was posted to somewhere in India, where her husband was serving with the army. They were able to be together there a wonderful happening, and they both survived the war to their home.

The Nurses were all young, mostly lovely girls from all corners of today. Half of the pay of who and eager to carry out their allotted job whether a hospitalistic driver, forward transmission worker, submarine shipboard member, such terms appeared to whatever. Young girls would drive a heavy lorry, alone up to length and back in 24 hours to pick up a replacement part for a submarine. The boys and girls in the days worked together in contributing to keep the submarine afloat in the Battle of the Atlantic, leading up to the preparations for the final destruction of Germany by the Combined Allied Forces.

They laughed together, had fun together and kept when a submarine did not return on many days in a country were fine. The girls did the book, writing and shared their books, while there vulnerability little ships were making their way round in harbor of HMS Dolphin. Naturally there was romance, marriage, a few days or even hours, love, pregnancy and really - sometimes substandard.

They did not think of themselves as special people, homes or homes, they were young people doing a job in the same way as most of their generation in both service and civilian life did. A job which at that time and in the circumstances which then prevailed, had to be done, and to finish that was not their way.

These laughing, lovely and lovely young women wanted for those beautiful busy lives, however, most conversations young men, who put to sea in little submarines, many of which were lost with all hands. During this time Portsmouth was being bombarded by V1 missiles and its own fleet, if their families were safe.

In the early months of 1944 great stories of lightning and with full battle equipment were sweeping around our western shores. I used to visit from Gosport to Southampton to see my mother and by mid May it looked as though the night side was too vast to comprehend. Cracking back in the hills, but was never, however, the rule of increased violence and the sound of one talking down each side of every lane along the coast.

Breaks landing of the German coast increased. Major submarines, which we had watched come to life in Dolphin, became active in the Channel. The waters of the Ministry of War, which had been built under cover of the sea shore in Liverpool and Gosport was completed and small ships of all kinds appeared on the harbor between Gosport and Portsmouth. The little ship Bantley was visible far out in the Channel and a look at it through a would be possible to wait in the tale of 'Wight without getting one's leg wet.

On the night of 4 June the women and equipment were mobilized on various craft. The women became very busy with the work and the morale was very high for 14 hours. All day long on 5 June until dark, the men could be seen drifting about on the choppy sea. The discussion and appreciation of the ships embarking on such a hazardous mission are considerable.

On the morning of 6 June we were in the sound at HMS Dolphin a position showing the

every second defence. All the ships had sailed away during the night — in silence.

All Harker Hospital every bed had been made ready in all available space and we all waited. The first casualties were not so high as had been expected (Operation Overlord) was proceeding.

I have never forgotten those young men, aged in many to 30 years contributing the valuable life insurance. When we returned to base the

entire ship's company assembled around the harbour in welcome for and for crew who stood watching and smiling.

They shall grow not old as we who are left grow old
Age shall not weary them nor the years condemn

In the great silence of the sea, and in the standing

We will remember them

The Navy to the Rescue, or from Scapa to Sydney and home again, fifty years ago

C. A. Clarke

Casualties are liable to be troublesome and attack the Royal Navy to get me back in the night hours. It happened like this. In June 1939 I was getting bored with life's constant work in the City of London (my only bit of excitement had been examining Winston Churchill, who studied a couple of weeks whilst I was in the Admiralty) and I was an advertisement (I took in the Times) for medical columns for the *BMJ* and I applied. This was successful and I was called up on the warlike day. 3 September 1939. I reported to Chatham and left my home on what I thought was the last port but it turned out to be the Queen's ship and I was duly represented by the officer of the day. However, I was charged up, meeting a lot of old friends and I spent the first six weeks of the war greatly improving my amateur.

I was then posted as a Surgeon Lieutenant to HM Hospital Ship *Amazonside* (Figure 1) which was being based out of Liverpool. I accompanied Surgeon Captain John Martin aged 60 (my son, to be) and asked which was the best land in Liverpool to stay on until the ship was ready to sail. The best land was the Admiralty but Surgeon Lieutenants will stay in the *Shelford*!

We sailed in November to Scapa Flow where we were stationed on and off for nearly three

years, acting as a base hospital as there was only a rock here in the sea. Shortly before we arrived in Scapa, HM *Rox* at Glisk had been sunk by the German submarine commander (Preston) who kept into the mine and out again. The boats in the hospital had been terrible, the warning having been continuously given as at our attack, as the nearly everyone went below decks. The few who did not, sat up, jumped overboard and swam the 400 or so yards to the shore.

When the *Rox* First arrived in December 1939, we became very busy and Scapa became one of the busiest places in the UK, most of the hospital being on the mainland. My wife, Fita, managed to get my sailing dinghy sent from the house at Scapa in Scapa by train (it cost £10). I did not mind it back (swimming a mile but). We sailed round HM *Rox* the day before she left so what was really so to be lost last voyage but just before that, we took off from her a rather seriously ill with appendicitis. He was later death a hour but after an operation became a lucky blood surgeon.

A main conflict occurred on the *Amazonside* between the Surgeon Captain and Doctor, the Captain of the ship, as to what was the water. It was settled by a compromise. When we were moving on HM *Ship*, later, was the boat, but when a *Shelford* Navy was a new Doctor.

In the hospital ship we dealt with the common diseases and I only mention a rather exceptional one. Malignant melanoma as usual in wartime was rare but there were occasional

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Figure 1 HMS Hospital Ship Amaranth in Liverpool 1940

even (I'm at least in London, Amaranth) where there was no evidence of meningitis but a PUO evidently resistant to antibiotics and a rash which appeared when the temperature rose. These patients did not appear seriously ill but the raised temperature and the spots prevented the many visits, and meningococci was often grown in blood cultures. While meningococci infects the symptoms quickly responded and I felt sure the condition was meningococcal bacteraemia, as I wrote in the *Notes* (1), where house physician I had been (Dey) had who had mentioned the disease to me, and he agreed.

Nowadays meningococcal bacteraemia seems to have disappeared and the only alternative to the standard illness is the serious side of meningococcal septicaemia, which is not infrequently fatal. A typical case of meningococcal bacteraemia in the *Amaranth* was that of a patient aged 46 admitted on 30 April 1940. For the previous six weeks he had had severe pain every fourth night together with fever and crops of spots, but his general condition remained good. The spots bore a marked resemblance to erythema nodosum except that they were not tender. He was discharged to shore hospital two days later and presumably recovered with penicillin.

In 1942 we sailed from Suez and went to North Africa via Gibraltar where I was off for about a fortnight with relative inactivity.

Somewhat less both sides of the war had the illness and it postponed the battle of Alamein. In one service it was much commoner in the officers than in the ratings. The ratings had no easy explanation — but the officers, much too

much gas for those days it was bad for you! — for the doctors, presumed to be more sensitive, noted the officers had their cooking and clean washed on messes whereas the ratings made cleaned their own spots and they not infections did not spread so easily.

Our next voyage took us from Gibraltar to Algeria where there was a big pump out, and we took on board quite a bit and worked day for terms, but this went seriously damaged American soldiers. I was in charge of the Yanks and they worked me, but I managed to solve the problem. We had on board some sick German prisoners of war, among them a sergeant called Adolf, and under his supervision they provided petrol for use on my third voyage.

And we began to Amaranth with one episode on the way when a Luftwaffe bomber threw a single egg case bomb and we worked, but our German POWs said: 'There's nothing to be frightened of — we even for French bombs our hospital ships.'

I left Amaranth in December and took a job as a medical specialist (in responsibility roughly the equivalent of a present day senior lecturer) at the Royal Naval Hospital in Haslemere, Liverpool. I was there about a year and luckily got to know several Liverpool consultants, particularly Robert Crosse the physician, and Joe Collins the Surgeon Commander RNVR, both of whom were most helpful to me later on.

SERVICE IN AUSTRALIA

And so to my last year in the Navy — in October 1944. This and I was on leave for a few days.



Fig. 11.2. Aerial view of Royal Naval Hospital, Hong Kong, 1945. (with thanks to Frank & Rose, who took the photo). The Hospital had 3000 beds when taken over by the US Medical Corps, but only 1000 when it was by the Royal Navy.

jumping the hills on the Lake District, when we got back to our days there, with a telephone which I regard as indispensable. Proceeded to Royal Naval Hospital, Sydney, Australia. (Intended to retire, wasn't it? I had endured for more than twenty years, nearly four years of war, but although the situation in Europe was improving, there seemed little chance the Japan would ever pack up and I thought that I should end my days in the southern hemisphere. But remembering what the headmaster at Christ's (London) had told us — 'The word of a lawyer [he is to be] kept dangerously — I did not argue. The job seemed to have good prospects.

As in November 1946 for a second time I sailed away from Liverpool. We were the first British commitment for the Sydney Naval Hospital and we were eight officers in a cabin, because the top deck was already occupied by the new Governor of New South Wales, complete with wife, children and maids. We were pretty hidden about that.

The ship did 23 knots and after a destroyer

merged down to George's Channel (now we were at full sea — not full for the submarine). She was a good ship but awkwardly supported to have been christened the *Empress of Japan*. For obvious reasons, she had become unusable and she had been renamed the *Empress of Scotland* but there had not been time to change the name again — which was all as justified.

We made Sydney via the Panama Canal in 28 days and here a study of coded. None of us had seen the light of a city for five years, and there was Sydney, it up for Christmas.

The hospital (Figure 2) was not ready for us as it had only recently been evacuated by the Americans who had put up with. We stayed in a house, barely used. Peter's long stay pulled down in which we spent about a month. At a reception party, we had our first Christmas Day dinner — I hope for some — and there was all the necessary and needs, but not. Happily to survive, indeed I suspect helped.

Hospitality from the Prince Alfred Hospital included great meals every Sunday morning



Figure 3. Officers of the hospital. (From left): Commander Lieutenant Commander Fennell (Germany); Lieutenant Surgeon Lieutenant T. S. Whitworth; Lieutenant Surgeon M. J. Allen; Surgeon Lieutenant Commander C. A. Clark; Surgeon Lieutenant E. S. J. O. O'Connell; and Lieutenant (Colonel) rank Lieutenant Surgeon Lieutenant Commander J. Stoddart; Lieutenant Surgeon Lieutenant Commander Fennell; Warrant Surgeon Lieutenant Commander D. J. Whigham; Jackson.

led by Rimpson Maddox (see Note). The war moved miles away though the Japanese frequently remained so that a Japanese submarine had shelled their hospital. Sometimes it did get through the defences, but within 15 min it began to do and got out again.

Eventually the naval hospital was ready and my job was immediate. All the main specialties were represented and well staffed and I found medicine at a great cost. The hospital was admirable and I had more clinical freedom except on two remarkable occasions. I had under my wing a most aggressive YAO with a noticeable plural effusion. When this occurred, I argue for vented pericardiocentesis that the loc. resolved him, but I was told by the Surgeon Commander that she would do better if we kept her in the Antipodes. The reasoning was flawed, but I was only a few sleepers or I had to leave it.

Several of my colleagues caught by the current (Figures 3 and 4) went on to have exceptional careers as medicine and I am appreciative that one of these, Dr James Wilkie of Bradford,

provided these photographs which evoke many memories.

In Scotland pictured in Figure 3 the Scottish dominologists came out in a large group. We had our gaze fixed and brought a display which are called in Battery Bay. The sailing both there and in Sydney Harbour was excellent and we, about 150, left before and visited the incredible Sydney Harbour. It was 2,000 square feet of sea but the shape was not defined water would have been soon off by a 10 foot international. Nothing was said not to be legal but there was a broken branch which followed, with care and the crew had numbers on their backs like football players today.

The day of victory in Europe came and passed us by. In the Antipodes victory still seemed about for about July 1945 our newspapers told us we should be home by Christmas. We were obviously at the bottom and at Angon, some Marston and Magenta and the war was over — just as we had just fully argued.

81 days I shall never forget. There was a strong breeze and the end of war celebrating by a sea

and vitamin therapy on release was poor probably because of the long gap before treatment had started. The daily rations while they were in prison camps had been often less than 1 lb of rice and little else. The rice often became mouldy and the general feeling in the camp was that a form of beriberi was the common diagnosis.

But this is not the whole story. On 1 September 1945 there had been in *The Lancet* a paper *Osteoarthritis neuropathy in the Malaya Japs* which was a report by Spillane and Scott¹ on 112 cases of the most pronounced of war in our hands. In the main the symptoms consisted of numbness of the feet, nerve damage and pain, paralysis, but many patients developed only the acute manifestations and the illness usually began with feeling numb. A diagnosis of nutritional neuropathy seemed the most probable explanation of the illness since they appeared malnourished and suffered from chronic dysentery. There was no evidence of infection or other likely cause and there was absence of the illness among the camp staff and among the thousands of other troops in the area, and although there had been no outbreak of pellagra previously in the camp very few of these prisoners had been afflicted. Furthermore the neurological syndrome did not appear in other camps where pellagra had been a serious problem.

The daily rations in the diet prescribed for the camp were: Curry 21½ Kcal, Potatoes 10½g, Cereals/beans 40½g, Fat 12½g, Vegetables 17½g, Sugar 12½g, Fruit 12½g, Raisins/figs 1½g, Noodles and 20-egg Ascorbic acid 20-egg. Moreover, on this particular camp rationing tablecloth was found to be from India and the daily rations are likely to be much overestimated.

In London and I wrote about the above paper by Spillane and Scott when we got home and limited to the discussion in the Royal Society of Medicine² after showing our film on 19 February 1945. Spillane was there and there was a further paper which we had not previously known of by Garland³ which added we were seeing the cases in Sydney. He had described a similar syndrome in British and Indian troops captured by the Japanese in 1943 and named it *Rangoon palsy*.

What is interesting is that Spillane and Scott¹ stated that the syndrome they described had not been previously reported, but it seems to me that it was of the beriberi type and as *The Lancet* of 11 September 1945 at least weeks after Spillane

and Scott's original paper there was further communication (letter) from Spillane⁴ reporting on British prisoners of war of the Japanese in Burma and Malaya who had been exposed for three years and had recently been freed. They had a similar syndrome to our prisoners, from Hong Kong and as the German case in the Middle East. I think that they read all these. One case had three was delay in getting Spillane and Scott's paper published.

In addition, it seems that from Turner McLure⁵ published a report in British other war prisoners of war being marched by the Germans from Lunenburg in Upper Silesia to the west in January 1945. He thinks three neurological syndromes were due to the unusual combination of general starvation with forced marching in very cold weather. (See also Edgely 1945⁶).

THE FOLLOW-UP

Seven years later Dr W. Scott and I⁷ thought it would be interesting to see what had happened to some of the Sydney patients, in particular we wanted to find out whether the condition of these severely disabled had remained stationary, become worse or improved. We had 31 case histories, wrote to the men and got 34 replies and somewhat later we received an Liverpool reply of the original Hong Kong case. A chart is given (copy in a letter) from one of these follows.

I do not seem to have contact with my men

My balance has improved a little although when standing my feet with my eyes closed it is not so good, but I have full confidence standing in the bath with my eyes open. My eyes continue little better some days. I can read the headlines of a paper, but I must wear glasses. I would be lost without my high-power reading glass, which has three lenses. It helps me a lot. I hold it about 1 inch from my eyes and two inches from the paper. I use a headlight, one at the bottom.

The most striking feature of the whole letter, apart from the definite improvement in coping with these disability — some pain, some loss of touch and drive that day — while others showed remarkable resiliency in overcoming their disabilities — was of their own having a play-therapist as one of his visits consisting in a very low level. 2/58 in both eyes.

It has already been pointed out in the two books recommended above⁸ that there may be considerable overlap between the various

neurological neuropathies. However, there is a strong tendency toward death in youth neurology. Not infrequently some 20 or 30 years after the onset of the disease, the patient develops Parkinsonism and it seems probable that there is a link between the two disorders, and that in some way earlier neurologic predisposes to the Parkinsonism.

In 1946 there was a paper on the health of captured USA prisoners of war from the Far East¹ in which 611 patients were surveyed on the USA. The abstract at the end of the paper was as follows:

The foregoing has been an abstract of the findings from a health survey of 1,619 captured prisoners of war from the Far East with an analysis of the results of prolonged malnutrition and overexposure and a discussion of the significance of these effects. Working deductions from the overall statistical data suggest pathological changes, a high incidence of pulmonary tuberculosis, malnutrition, wasting, dermatological, bone fractures and psychological changes. Specific data laboratory findings include a high incidence of infectious agent-related diseases, diabetes, especially mellitus, and osteoporosis.

It would be worth examining the subject now as to if there have any data on the health of the above ex-prisoners of war in the late 40 years, particularly with regard to Parkinson's disease and other neurological conditions.

In our original survey² of the Hong Kong prisoners interned at RUSA Sydney there was one clear cut case of myotonic dystrophy and one (aged 34) of myotonic lateral sclerosis. There may just have been chronic findings, but two such rare diseases in 71 cases is worth investigating in other series, and could be repeated about as a new USA survey.

Relevant to this is the fact that a well known neurologist in this country (Dr J B Gilford, wrote to me as follows in 1979:

In a group of men who had been prisoners of war in the Far East between 1942 and 1945 65% had neuropathies of which spinomyopathy and peripheral neuropathy were the commonest. However, as with the facts there was an observed incidence of progressive cord disease and Parkinsonism beginning years or decades later. (Personal communication.)

Gilford suggests that these rare diseases are related to that period in prisoners. The progressive cord disease, most characterized by upper motor neurone weakness and long tract

weakness signs but without brain stem involvement³. I reviewed Dr Gilford again in April 1986 and he told me ten years after the time as they had been in 1975 with myotonia but none neuropathies. Interestingly in the *Lancet* of 4 May 1986 there is a short article reporting also several cases of myotonic lateral sclerosis by Kido *et al*⁴ the latter being a continuous degeneration of p-synaptic protein suggesting a slower degenerative disorder of the CNS, but had previously been thought

Another point made by Patricia Le Querne⁵ is that former prisoners of war are now reaching the age when diabetes degenerates changes are likely to begin and age more likely to show into various other 'underlying' the cause of apparently new neurological problems.

Certainly my wife had a personal experience recently from the widow of an ex Far East prisoner of war who developed Parkinsonism aged 62. The widow suggested this matching to her ex-prisoner of war. Bataan, many ex-prisoners are going down with Parkinsonism, motor neuron disease and Alzheimer's. The Bataan suggests, The Philippines may be crucial link, as a place first that the prisoners were held on which is high in protein and high in carbs, and is still being grown for the Third World. According to the Bataan, these place foods are Cacao, rice, corn and bananas, and bananas, etc.

The matter is by no means proved but the point is made that neuropathies are not yet fully understood and are worth investigating more fully in differing circumstances.

Two final notes will show how variable the various neuropathies syndrome can be:

1. Summary of a paper by Gil and Kido⁶

Of 198 Bataan Far East prisoners of war, interned between 1942 and 1945, 49 (25%) had evidence of previous symptomatic neurological disease during their in their periods of malnutrition and captivity. The commonest syndromes were peripheral neuropathy (often of burning hot type), spinomyopathy and motor neuron disease. Through national neuropathies disappear soon after release as most ex Far East prisoners of war so some they have personal open 20 years post-exposure with neuronal death.

2. Varieties. Wylie and Gil⁷ in a paper on clinical and subclinical nutritional neuropathies during ex-prisoner of the Japanese. The abstract of this paper is as follows:

RN Recollections — Korea 1951 and thereafter

P W Head



The author Korea, February 1951.

In 1950 I was MO at RN Commando School Bickley, enjoying myself on the Commando course in Wiltshire Vale and at the CMT Chiswick School (CCAS) in Iron Corner, Chiswick, on the end of a rope on the cliffs at

Seamen Cove like a fish. I was not my idea of being a Naval Medical Officer who had volunteered for a small ship in the Far East at the latter part of WW2. As RN Commando was formed for Korean operations I was the designated MO — soon to be cancelled as I qualified a 'naval apprentice and gentleman'. After five weeks in RNH Plymouth, my medical category was downgraded for six months during which time Mr Ellis had turned up and left for Korea (Surgeon Lieutenant Jones had been appointed as replace me). Whilst on home leave in the end of 1950 I was recalled to duty, informed on 14 December that Surgeon Lieutenant Jones had been killed on active service, and that I was to relieve him, leaving UK on 5 January 1951 after considerable procrastination.

The long journey to Tokyo often started in a propeller driven Argosy, was interrupted with technical stops at Cebu, Manila, Cebu, Cebu, Bangkok and Hong Kong. In Calcutta at Dum-Dum airport, going to the bus was impossible as buses were clumping again happily on the over-crowded and did not wait to be moved. At Bangkok, the aircraft disembarked first on 'take off' leaving two engines and puddles of oil on the tarmac — this necessitated a 24 hour stop while a replacement engine was flown up from Singapore — an excellent excuse for sampling the local offerings!

A scheduled and somewhat depressed BQ daily arrived at Seoul airport. Tokyo had also received a tremendous welcome from old friends: Jangle Barclay, Peter Thomas, Gerald Roberts, Douglas and the few ones I had for 10 years at the Birmingham Hotel. I played polo two perhaps worth less. The war was approaching after the Royal Air Force and US 1st Marine Division had at World JPS operations in the withdrawal from the Chinese River and the North Korean border. Despite the stress caused by the services everyone was in superb mood and physical shape and I felt healthy, and looked to join them.

My new life was led by MPO Lloyd (a friend, recalled for the Korean emergency) were a team of strength having had much to

Surgeon Captain P W Head OBE, CBE served on the Royal Naval Medical Service for 34 years. His last appointment was MPO RNH Ruler.



USNS fleet collecting at sea, Korea 1951

the anti-deposal of wounded, killed and the loss of their desperately popular Michael Callow, who was killed in action in the Chinese Riverfront.

As I recall a month or so later we moved to Camp McMill and then Kove, based up in US uniforms with an M1 carbine plus 45 Colt automatic which seemed necessary for the 'pink section' of patients. Only the president was the dominant sign of British identity. The unit was recruited as part of the US Air Materiel Division, receiving US pay and stores. My individual equipment (though not 'weird' all US things. Monthly I had to discuss for the consumption of these drugs etc. to MDG London on US forms and books which were loaded with the standard forms provided by the Service. Of course most of the US drugs were different from those provided by the MGOV. The bugs did not know those drugs (though not I for a long time) and gave me much trouble, even the vitamins — why could I not eat Mr. Wolff for vitamin, or have plenty for good stress.

My marine colleagues were eagerly exposed by 'Wally' (the supply officer who took the forbidden, going MGO under his wing. We enjoyed ourselves in training around Island Pyl, moving later on to Seoul or South West Japan — living in a tented camp and suffering a major earthquake and a typhoon in one month. My first recollections (about 1950 years in Japanese ships and other interesting places, including Hapsham) was of the ship's mast on a road cut way into the Korean 40 miles behind the front line, in North Korea. We stayed off the coast of the USN Navy (14th and 15th) and the USN (15th). We anchored about a half mile offshore — the sailing, but was only a few yards from the beach. My US medical officer (colleague) and I set up a makeshift hospital in USN Navy. For nearly our patients were not good. Later I cannot remember the unit was transferred to a small island in the gulf of the Korean, in Wonsan Harbour. This was continued and ended their time to rise, by the Chinese troops. My first North

PO and an SRA were taken prisoner by the Chinese, random men to me as for nothing dog out. At the time there local customs, some said might certainly prove me as a chance to treat the prisoners' friends!

In due course, we all returned to Saigon, where later a signal was received from HQUS (US) stating that the unit was to return to UK on the Troopship *Dauntless* (Crew off) but except a certain Singapore Landmarks Head! As the time I was visiting the venerable RN Hospital, Ship Master (which had a black ship to beach down and require US help, therefore staying in port most of the time), when, without notice, in change was an answer for us as passed as the first incident with a philosophical capacity for you. He was deeply unhappy if a matter could happen off the ship in 1980 having officially visited us both at HQUS Saigon. I was, visiting this subject body to be told by him that although the whole Command was being returned to UK I was the lucky one who could maintain those of you. Thus, I still being appointed as surgeon in HMS Dauntless (HMS Dauntless) and Senior (EMS) Officer. In the later initial career we carried we worked off the new vessel of being in comparison with the US Navy for a time or so. I had a major problem of the time, as the Captain (our Commandant of Ship, even understood why I did not have a proper naval uniform. US-style and a ghost of the US Navy, and quite right also I said. When I was supposed to carry 'No 1's' stuff

about and there, in around in the weather, I don't know!

To end the story, I returned to Malta from the Far East in HMS Gleng, in 1982, after a further few weeks on detached service at HMS Dauntless in the Eastern Mediterranean and Turkey. I flew back to UK (Blackburn airport in 1982) and as a helicopter. My subsequent visit to the Medical Director's Department in Egypt my first two years, activity was granted by, did you have a good time? and with it going, to sign on the career commitment after National Service? I did sign on, and now in 1986 I can say that my 26 years in the Royal Navy as Commissioned (as Nurse and Therapist) Surgeon, Medical Officer in Charge RN Hospital Harbin, and a further 10 years as Clinical Consultant (before an ENT Surgery in NMS Army, in Germany have been very happy years. The above events were a long time ago, and I only hope I have been accurate in recalling them. I have numerous photos of the years on in 1980-82 but trying to fit them all together with us increasingly a tight mind, and the fluency of hands get is difficult.

P.E. My dear new wife had just my Naval uniform to me by me that with all the more of both years, possibly before it occurred to— even the people had died of old age and I must could get the answer out? I can't remember if I told the historical company that I certainly received my own uniform and black shoes!

Book Reviews

Low Back Pain: Clinical Diagnosis and Management Second edition. Limited P. Haines. Croom Helm, London for New York February 1986. Distributed by Cassell Book Services Ltd, London. Pp 337. £36.90.

This is a single author textbook of repetitive orthopaedic surgery whose success author wrote a foreword he was intended to find, 'in going to my bed one day, that a significant number of patients were undergoing surgery because the spinal surgery had been carried out badly. He therefore decided to write his own, at least, authoritative textbook of basic orthopaedic procedures. Whilst it is true that thousands of low back might not have been better served in Britain, certainly few it is to be the opinion on right the first time the single author textbook is a flying start. However, the surprising omission of back pain disability has, personally, kept Low Back Pain - Clinical Diagnosis and Management, alive for a second edition. It is certainly clear mind and distinct, and certainly one must a view of management of low back pain. While there is little in it that I would disagree with, it reads like a manual rather than a textbook, but can be referred to. It is not boring, it is dry and age it is appropriate for a textbook in orthopaedic a bit of suggested reading at the end of a chapter without any reference to the text continues to have gone during corrections, one do I believe that misinterpreting to back pain warrants an entire chapter, particularly useful on the relevance of it to the work of General Whiddell who, as he published writing his, writes misinterpreting of misinterpretation and indeed has misinterpreted method to our understanding of the so called functional back pain or similar.

I, as an orthopaedic surgeon look for orthopaedic evidence, and certainly I cannot recommend it for study by generalists. It may be useful reading for a consultant orthopaedic, surgeon with an interest in it with a good guess!

IN A FARMER, MURKIN ROBERTS
Canadian Orthopaedic Surgeon
Royal Hospital, Halifax

Statistical Information The statistical P.T. de
Douglas. Butterworth, Hammersmith July 1986.
£10.99

Guidelines at the Clinical Medical Council's
statistical documents. Tomorrow's Doctors
recommended that all medical students and

senior in health care should have a working knowledge of Information Technology. With this in mind Professor de Douglas takes a leap in the IT landscape and presents what he describes as a basic introductory text for the 'informationally challenged'.

Information, the author claims, does not mean in the English language. However, he defines his personal treatment as a basic, systematic, Information Technology and Information Science. The first three chapters are largely devoted with further terminology, together with heavy punctuation, hierarchical, linear, recursive, first year medical students to read Information Science.

The author does write in full two column text, first in each column by the hand through the letters of medical computing, with the help of a calculator, computerized, and second using an over style, to explain the role and value of information science and technology in medicine. Thus, the remainder of the book is again devoted into two parts with a different target audience for each.

The Teach yourself IT, distribution associated chapters. Getting started, the basic steps and basic network usage, are a basic chapter in dispelling the fears of microcomputers, pretty leading them through their first command. However, these chapters, full of of computer general purpose computer teaching, perhaps partly because the text and the computer don't separate either but, but in parts they contradict, and partly because the book, although well structured, has a number of misstatements, which will prove confusing to a potential reader.

The diagnostic chapters, Information, is adequate. The entire structure and value of medical information, Information science and technology, in clinical medicine. Personal views and problems and The future, provide a thought provoking distribution on the current state of medical computing. However, in the author's own admission, 'the book is devoted through four of obsolescence'.

It is unlikely then that this book is useful reading for anyone involved in medical computing and certainly a good reading for anyone who is healthcare. However, the Teach yourself IT, sections are better structured and undoubtedly by all means in these, this refers to some out of the protection of medical education.

PALL THOMAS

Department of General Practice
Institute of Rural Medicine,

Quantitative Research in Health Care Ed. Nicholas Harvey and Catherine Page. BMJ Publishing Group 1986. Pp. 79. 08 210 51. Overston 517 00

The title of this small collection of seven papers is not by any means an apt description, which was previously published in the BMJ (30 January 1985). This takes the form of a historical discussion diagram between the two states: 'in the development of a large and successful health services research unit, with an emphasis toward of quantitative research and also a recently appointed sociologist. These presented views of health services research and its methodology reveals a fundamental misunderstanding and clearing of much where, approach and steps on the above? The formation of this book is an attempt to lead the casual reader through the conceptual difficulties of quantitative research, which may have, and almost, scientific regard in such science.

The first three chapters, by the editors, contain the key questions for quantitative methods in health and health services research. The next three chapters, and using observational methods in health care settings. The other chapters, by social scientists, address issues that qualitative methods, focus groups, consensus methods and case study evaluation.

In the aftermath of the Pridmore committee and assessment by the Culture report, health services research in Britain of the 1980s. This book is essential reading for scientists, clinicians and all who need to understand what is happening in the NHS R&D process, by which our performance is judged and rewarded.

R. H. TAYLOR
Consultant Physician and
Geriatrician, St Mary's
Royal Hospital, Essex

Scientific Basis of Health Services Ed. Michael Peckham and Richard Smith. BMJ Publishing Group April 1986. Pp. 180. 08 212 80. Overston 425 00

This third and expanded volume represents a further by now of a conference of the same name held in London in late 1983 under the aegis of the NHS Research and Development programme.

The editors and the publisher say, in the preface, that for bringing this useful book to market in such a timely manner. The book may have been prompted by the subject matter is, of course, evidence based medicine, but it is not only

and it is with this that the volume is chiefly concerned. The notion that medical progress should be based on a rigorous appraisal of material left in the evidence hierarchy is not new but an application to the design of health services is. The book explores this in some depth and in particular focuses on a kind of review by Professor Mann of the evidence of health services interventions in primary care settings and its influence on health policy.

There is a historical critique of the classical positivism concept by a Cochrane collaborator. The fashionable concepts of evidence based patient choice is given limited coverage with the Director of the National Cochrane Council for ongoing for patient involvement in setting research priorities. Predictably well-fused comments from the top of the book and there is a discussion of QALYs and of health service costing mechanisms.

The usefulness of the book is to an extent new thinking and, although public health doctors are likely to be more in tune with the contents, the book touches some areas of a clinical practice. It is recommended.

A. W. MILLERSON
Principal Medical Officer
RSM Naval Base Portsmouth

The Oxford Illustrated History of the Royal Navy Ed. J. R. Hall. Oxford University Press 1985. Pp. 480. 125 00

There also goes the gloriously illustrated book partly as a volume of reference place their management plans in great risk as they are likely to be driven into a corner by the imagination of the likely conflict groups — and will be very comfortable about in the book is of it will be considerably on the top of history. Each of the three chapters, covering the history of the Royal Navy in chronological order, does not take the preambles and often is the end of an appropriate map or diagram, the main events of the period, the places where in context considering the political, sociological, economic, social and other factors which influenced the conduct of affairs, and other outcome. The reader seeking further information is guided to appropriate sources. Everything about this book is of high quality and I recommend it unreservedly to all with an expanding mind and appetite in maritime affairs. Perhaps it is not too early to begin considering *Chironomus galei*!

G. H. G. MILLERSON
Dean of Naval Medicine

Obituaries

A further tribute to the late Sergeant Captain John "Muttie" Dennis has been received from Bayesian Commander J J Nicholas Royal Navy (Retd) who writes:

Sometimes there was not all that much social contact between 'guys' but everybody knew John Willie Dennis at the University of Dental Medical District in the '30s. For example there were legendary raptures such as the occasion when on visiting the Mount Water in London, he got into a bottle and with considerable difficulty was got out of it again. Another occasion as he is dressed in new things but when there is no place to turn having visited the Union Terrace square became quarrelsome and belligerent. And what's ailing people like that he would argue greatly looking the struggling protagonist again with a firm grip on the coat collar.

John qualified, impressed and joined the Royal Navy in Spring 1953 I was on my first trip out on F and D-1000s from Chatham. I knew John was on a 'cruise' based on Singapore so while we were stopped in Kappela Harbour I got in touch with him and wanted him over for tea and a look (looking my beautiful top what day. He duly came on board with the girlfriend of the day and we were just devastating in the atmosphere as provided by my coffee served when I was urgently summoned to go to the forecabin because a man one of the ship's crewmen had climbed the fore mast and was threatening to jump. I decided not to accompany over my shoulder and seeing my pocket to get on with the job, saying I would be back as soon as possible. When I arrived on deck the man was still on the mast and my first instinct anything could be done. He swung himself out on a lanyard and fell straight down through the M1 Hatch. As soon as we looked over the railing it was obvious he was dead but I was not prepared to go to the bottom of the boat to examine him and prosecute him so. This happened fairly steady as I was not happy with heights and the ladders down through the 'scot' decks were inconveniently just in the hatch. Eventually I got down there and was just stooping over the body when I heard a 'plop' on the boards behind me, and when I looked round there was John. "I thought you might need a hand," he said. I was never more pleased to see anyone in my life!

He had quietly followed me up on deck, had seen the man fall and then had proceeded vigorously to show him the way down into the hold.

The world is a darker and less kind place for John's untimely passing.

Sergeant Captain (R) John Kenneth VIII RNK died on 16 April 1996 at King Edward VII Hospital, Maffert. He had been in poor health for a year or more, but battled bravely against numerous physical frailties.

He was born in London in 1913. His father was a dentist who was pleased when both John and his brother Ralph entered the professions.

John qualified from Guy's Hospital in 1940. It was not long before he secured the armed services as a more closely patterned over Europe. He served in the Royal Navy, taking part in the hazardous convoys to Spain through the Arctic Sea. He succeeded with pleasure his days as dentist on H.M.S. Bedford now permanently established on the Thames near Lambeth Bridge. He was usually serving on H.M.S. *Albatross*, on D Day when he received a call to the bridge to be told that the Commanding Officer was needed with gun fire in advanced battle. John composed the following note on the bridge to the present could not leave his post. The CO was then able to concentrate on the D Day landings, the operation was a success, and the Allies won the war — thanks to John and his lower order 'beings'.

After the war he continued in the R.N.V.R. or R.N.D. (London Division) as a later became, and was promoted in 1962 to being made Honorary Dental Surgeon to the Queen (1942-68). He became a member of the World Medical Society of Anaesthetists in 1955 and later became a freemason, one of the few dental members. He was Dental Officer at Victoria Hospital and was President of the Dental Society of London.

He developed dental practice in South Kensington and Wimpole Street before moving to the Victoria West Street, where he opened a practice in Hillingdon. He retired in 1979. He was Elizabethan who he married in 1961 produced two sons. They had two sons, Peter and Michael.

John was a stimulating, companion, extremely proud of his profession, who turned the topics of colleagues and patients into

Wardmaster Lieutenant Harold Hodgkinson
George Nichols (ex SACPO) — Treasurer of the RNM Medical Society, Kingston and St Helens Naval Association's writer.

Harold Hodgkinson was born November 1903 at Bristol. His married with his family to the Portman in 1932. He was educated at the North Devon Technical College and followed on his father's footsteps by joining the pottery industry. In the deep recession of the late 20s and early 30s many of the potters closed down and so early in 1931 Harold applied to join the Royal Navy and was accepted as a Probationary Sick Book Attendant. During a year's study course on the lower deck he reached the rank of Sick Book Chief Petty Officer in May 1935; he was commissioned and posted as a Wardmaster Lieutenant in November 1937.

I find the privilege of serving with him at RM Hospital Bristol in 1949 and again in 1952 when he was the Commissioned Wardmaster at the Training Division. His was a strong support as the various New Navy Staff Associations met and remembered as a respected no nonsense officer and gentleman of the old school.

Surgeon Rear Admiral Rex Philip Phillips CB 1984 died 21 December 1985. *Surgeon Rear Admiral T.R.W. Morgan* writes.

Surgeon Rear Admiral Rex Philip Phillips CB 1984, who died at the age of 81 on 21 December 1985, began his long contribution to the Royal Medical Service in 1934 when he joined the RMHS as a Surgeon Sub Lieutenant.

Born at Truro in Cornwall on 14 May 1913 and educated at Newquay Preparatory School and Epsom College, Rex Phillips graduated MB BS from Durham University in 1937 and after House Surgeon and Casualty Officer appointments in South Bristol, transferred to the RM in early 1940. The progression of war service took him almost inevitably to Portsmouth and Devonport Hospitals but also further afield to Mauritius where he served as RMH Surgeon and ultimately to a spell as one of the old and uncomfortable four-wheeler doctors on call to the RN by Airlines in 1948.

His post war career started in 1948 as RMHS Executive as Specialist in Ophthalmology. Promotion to Surgeon Commander came usually with the going rank in 1950 or 1952 as 1949 Insignificantly, and confirmation followed after a period at HMSO Shoebury while he was serving at HMSA Chatham in 1957. He then reported the loss of two bigger eyes in 1958 when he was Senior Specialist in Ophthalmology at RMH

Stytle from 1958 to 1957 before moving to HMSO a department as Advisor in Ophthalmology.

His promotion to Surgeon Captain in 1960 was followed in 1963 by a voluntary return to Stytle as RMH for three years, and then by a full appointment in 1965 to Flag Officer Submarine. From then he was promoted to Surgeon Rear Admiral in 1966, becoming RMHC at RMH Plymouth, an appointment which he held until his retirement in 1979. Shortly before retirement a CB was added to the OBE which he had been awarded in 1968.

Superintending Nursing Officer Kathryn McCutley, RMHC, QJRNNS died on February 1984, after a long illness at the age of 57. *Commander John Stanger, QJRNNS* writes.

Kate joined Queen Alexandra's Royal Nursing Service in 1957 as a Probationary Naval Nurse to train to become a Registered General Nurse. An energetic student, her excellent practical nursing skills were matched by her academic ability and she received the Student List Award for her exceptional achievement in class examinations.

After qualifying in 1960, Kate was drafted to RMH Plymouth where she worked on the QJRNNS Block for a year before leaving the Service to embark on further training. After completing a course in general nursing, she was serving at the Kent and Canterbury Hospital, she moved to the Royal Devon and Exeter Hospital where she took a further course in intensive care at the northern.

Following a post as a staff nurse at the Intensive Care Unit at the Princess Hospital, Wellington in London, Kate rejoined QJRNNS serving as a Nursing Officer on a Royal Cruise Commission in August 1967. Appointed to RMH Harker, she worked largely in the role of an officer, showing the same professionalism and high standards for which she was to be known for the rest of her career. A keen sports enthusiast, enjoying sports, swimming, skiing and horse riding, Kate became QJRNNS sports representative.

Her next appointment was to RMH Colchester. Promoted to Senior Nursing Officer, Kate worked on the Princess ward when she proved to be a very able manager. On duty she made the most of Colchester's sporting opportunities, and became an enthusiastic driver. In January 1982 Kate was appointed to RMH Plymouth, taking charge of the combined Coronary and Intensive Care Unit for two and a half years. Following this demanding post she moved to a

very different role. Incoming Nursing Officer in the medical centre at HMS Cockspur. She adapted easily to primary care and, by now a diving instructor, went on regular assignments with the Cockspur Sub Aqua Club. She also spent a month on loan to the Services diving school at Bletchley. It was during this appointment in January 1994 that Kate's professional and commitment to providing high standards of care were rewarded by the ARMC.

Appointed next to HMS Tower, working with Jordan, Kate transferred to a Medium Career Command. She qualified as a Sub Aqua Diving Supervisor, only the second woman in this Service to do so.

Returning to UK in May 1994, Kate was appointed to HMS Royal where she continued as inventory case. After a year a vacancy arose for an officer in the Undersea Medicine Department of the Institute of Naval Medicine. The post involved improving and teaching the Diving First Aid Course, monitoring the computers and officers used in the department and conducting clinical audits of diving accidents managed by the department. Kate's teaching ability and interest as a diver made her an ideal person for the post. Meeting its demands with her usual flair and enthusiasm, she was able to care for numerous care visits when caring for seriously ill patients receiving treatment on the hyperbaric oxygen

chamber. Kate was promoted to Superintending Nursing Officer in 1995. Finding voluntary special diving work, health she left the Service from the Institute of Naval Medicine in December 1996.

Kate's intelligence, vivacity and warmth earned her popularity wherever she worked. Her smiling, cheerfulness and good humour were never more evident than in the last months of her life when she faced her untimely death with great courage and dignity.

We have recently learnt of the death of Surgeon Commander M B C M Hamilton Royal Navy on 29 April 1996; of Surgeon Lieutenant Commander J M P Hardie, Royal Navy on 16 April 1996; of Surgeon Commander J W W Ridgman, Royal Navy on 20 December 1995; of Chief Nursing Officer E M M Rankin ARMC QARNNS on 26 May 1996; and on 26 August 1996 of Miss Jean Robertson CBE ARMC QFNS, Master in Chief QARNNS 1991 1995.

We have also learnt of the death on 12 April 1996 of Mr Stephen M B M ALYD Consultant in Ophthalmology to the Royal Navy.

Our sympathy is extended to the relatives and friends of the above. Any personal remembrances will be welcomed by the Editor.

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Service News

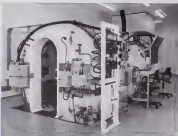
The New Hyperbaric Medicine Unit, Royal Hospital Haslar

J. R. Broome

In July this year, the new Hyperbaric Medicine Unit opened in the Royal Hospital Haslar. The pressure chamber in the unit can accommodate eight adult patients or six walk-in adults through a 'squeezing' hyperbaric intensive care can also be provided within the chamber and this capability makes it the only Category 1 hyperbaric treatment facility in south east England. The unit was built from the navy's continuing need to treat Service divers with decompression illness, combined with a growing recognition of the value of hyperbaric oxygen

(HBO) therapy in the management other disease conditions of military interest.

During the last decade much research effort has focused on the clinical benefits and cost effectiveness of HBO. In the USA alone there are now over 150 commercial chambers which despite vigorous cost containment in US health care continue to receive endorsement from insurers to treat selected patients, with a diverse range of conditions. These conditions include carbon monoxide poisoning and similar substances, poisons, wounds and compromised



skin grafts or flaps, monitoring soft tissue infection, non-healing flapwound, refractory osteomyelitis, post-infection soft tissue injury and thermal trauma, to list but a few. It is a new approach, however, since HRO is strictly a defensive response. It shall not reflect trauma a very useful adjunct to conventional measures as part of a multidisciplinary approach.

A key feature of the new chamber is its configuration to allow scientifically robust, double-blind randomised trials to be performed while in the chamber under pressure. Patients can breathe apparatuses, oxygen or air, oxygen concentrations dependent on air or 100%O₂, or less level. Consequently, the new chamber allows, trusting research opportunities into the use of HRO in many conditions, spanning most of the major clinical specialties. One of the first trials planned will investigate the efficacy of early HRO in the healing of treatment soft tissue injury — a major sports issue in the UK and USA, increasing an HRO to drive to more than players in the belief that HRO promotes a faster return to full fitness after injury. The scientific justification for this is currently apparent, but demonstrates that HRO was indeed effective would have obvious military relevance — such as protection against injuries on the common cause of injury at deployment. The planned trial will be carried out in conjunction with the Joint Medical Psychology Department and will study the efficacy of early HRO in reducing morbidity from mild-to-severe injury. Acute injury will shown as it is a common and definable injury that is representative of combat injury to which pain, a pressure and crush would therefore have implications for a range of soft tissue injuries.

The organisational arrangements to support the chamber are complex, but a good example of the

inter-agency cooperation that is becoming a feature of the post 1923 15 Medical Services. The personnel involved in its construction and associated hardware were provided by the Defence Engineering and Research Agency (DERA) which also provides the required manpower to operate and maintain the facility. DERA will be involved for such treatment performance.

Health funded the construction of the new building (No 99), in which the chamber is housed. Situated to the left of the main gate, the brick built building blends seamlessly with the Georgian architecture of the main hospital. The building's interior and furniture were funded by Health. The Secretary's Civil Agency (SCA) will provide necessary support services for patients seated in the chamber including provision of both nursing personnel and medical personnel and equipment for intensive care support. The SCA recovery ground crew from DERA for use of the unit. The Institute of Naval Medicine (INM) provides medical personnel including the Medical Director, both for the day to day medical supervision of HRO therapies, and for a round the clock emergency advice and treatment service for diving and hypothermia treatment.

With the commissioning of the new chamber, the Defence Medical Services have met their obligation to provide a facility in which to treat military doctors and other medical officers in this task. At the same time, are able to provide high quality care of the all treatment for a range of military reference conditions has been enhanced and additionally there is the training potential to conduct good quality research. We have achieved a significant goal.

Director of Health appointed Faculty's Academic Registrar

Major has a long record academically for Surgeon Captain J. W. Spiller who was elected FRCS and appointed Academic Registrar of the Faculty of

Orthopaedic Medicine. He has been an Editorial Board Member since 1994 and Director of Orthopaedic since 1995.

Surgeon General honoured by University

The Surgeon General, Surgeon Vice Admiral Tony Revell, added to his list of qualifications last month when he was awarded an Honorary Doctorate in Medicine (MEd) by the University of Birmingham. Admiral Revell, who is an Honorary Surgeon to the Queen, qualified at the Birmingham University Medical School in 1958 with the degree of Bachelor of Medicine and Surgery. In recognition of his achievements, the University Senate this year decided to confer on him a Doctorate in Medicine *honoris causa*. Among other distinguished people who received Honorary Degrees at the same time as the Admiral, were the Chief Medical Officer of the Department of Health, Professor Sir Kenneth Calman, the former Bishop of Durham, the Right Reverend David Jenkins, the Right Honourable Sir Richard Scott, Vice-Chancellor of the Supreme Court and Francis Woot, the writer and composer.



Blood Red Dinner

A record three hundred and seventy three members of the Royal Naval Medical Club and their guests dined at the Printed Mail Royal Naval College, Greenwich on 12 September 1988. Surgeon Vice Admiral A Craig CMB, Medical Director General (Naval), presided and proposed the Toast 'Our Guests'. The Principal Guest, Vice Admiral Sir Jonathan Trol RCB CMB, Deputy Commander Fleet, invited and led the company to the Toast. The Royal Naval Medical Club, Sir John Trol, Admiral Craig's speech is printed below.

Good Sir Lord distinguished guests — I welcome you here tonight on behalf of the members of the Royal Navy Medical Club. I was delighted to report that not one JMO dining — the superb gathering that can be accommodated — and on your behalf would like to thank Sir Jonathan for allowing us, once again, the privilege of doing so each year. The staff for their

services in this role, WO1 Commander Ryan for his excellent choice of menu, Read Sergeant Warden for his executive role and the BRNC RM Bandstand for their outstanding support — the obvious true measure of their ability — true professionals who display the strict high standards in their casualty handling roles at sea — the Navy is indeed fortunate. Finally, our real my personal thanks to the Club's Honorary Secretary, Surgeon Commander Colin McArthur who has singlehandedly coordinated all the arrangements. After doing so here, he has given the opportunity to visit the Chapel and I enjoyed that to you.

Since we last met here our total sustained manpower numbers have reduced from 1400 to 1100 with a compensatory increase in our civilian staff numbers. Further, many new work roles and new management arrangements in operations and administration. More other NATO countries have been undergoing similar changes and I heard a

story last year, told by Admiral Zepke of the US Navy Medical Corps, which reflected their dedication and heavy repression. It was of the seven-year-old boy who had six spoken words left — his parents had consulted various speech, hearing and psychological therapists to no avail. As his eighth birthday party the boy suddenly spoke and said: "The ship which sank. His parents were amazed and intrigued. They questioned him further — asking why, after all their concern and money, he had not spoken before his nephew." "Well up till now everything has been alright."

As I have said before our ship has needed rest for some time and recently we have perhaps been subjected to a flood of radio requests. Consequently the most of changes in their decisions was taking to keep individuals informed of the progress of the implementation process — the guiding principle has stated problems when decisions were frequently altered on basis of changing circumstances or delayed because of technical problems. However, in the long term, I believe the presence of both parties at the medical clinics and the staff should depend on a more lasting relationship.

Just during this period, we have had our visiting teams — the consultant officers, who have deployed themselves to provide a service on peace and arrival while standing in their trousers post Vietnam results. The consultants who cannot to start a building of patients to completion, for some three or four and both spend a background of skill throughout the historical of medical deployment and the consequent loss of continuity of patient care. The Principal Medical Officers of establishments — where at home they have had to juggle coast with related deployment staff numbers and abroad where financial expenditures are higher and many of the staff in support there are not required to perform our available locally. The Medical Officers and staff working with great good heart and professionalism alongside their civilian counterparts at Dorchester and Chel. Army and RAF colleges in Wexley — such locations such as this important problems. The Medical Services Officers whose administrative skills backed by their service experience are in constant demand for long single service and senior headquarters staff posts — just we have to be least ready to capabilities, fully on their staff beyond commander level and have the RNMS under representation in senior administrative posts the members of the Dental Service who are now part of the Defence Dental

Agency and continue to develop their qualifications and supporting infrastructure — a changing task as the only only comprehensive medical agency the Medical Technicians, and whose untrained members are too small to support such branch but was content to provide an excellent service whilst waiting, and they have been meeting a long time a demand on the implementation of local service arrangements. The Medical Assistants whose rapid training and capabilities have not been fully understood by our medical and service colleagues but who continue to perform their key role in support of CINCPACFLT throughout the world, our Royal Naval Reserve colleagues whose overall numbers are a little have reduced and who often can only undertake their usual training by following their own leave — and do so — such a their dedication, our civilian colleagues at Dorchester who have suffered the effects of various untrained staff cutbacks during recent times, and now also fully understood what a poor head jump means, and finally our loyal and caring civilian staff who accept of our support and provide that essential continuity despite major changes all around them.

We do also had our more total losses who having identified major problem areas have provided solutions and related concerns. While in the highest quarters — I would have expected no less — and of course there are some very real concerns, including those regarding delays in changes to Terms and Conditions of Service — harmonisation of these is absolutely essential if staff are to be retained and the new arrangements sustained. Although the Medical Officers we have a problem, both with lack of transfer to longer commitments and retention of individuals, and that is compensating the difficulties associated with undermanning. For years the training system provision of air man equipment has worked as well as it now brings too sharp relief with our reduction in size and the present training shortages — we must keep the Navy fit — every man counts and there is no spare, however, we also must give our people in the highest professional and appropriate military standard to be effective and exercise their skills and in most deploy to support operational tasks — we are in grave danger of falling short on some counts of we do this the particular factor.

Finally, we must plan ahead support with our staff retained and at sea in their last and command considerations that dedicated commitment means deployment — just such an exercise took place last week when seven or ten PCRS were deployed to

initially where German, Danish and UK forces received medical treatment and evacuation is second and third line. One of the objects was to increase compression and coordination of medical support to a multinational environment including integration of medical personnel from one nation at units of another, secondly the introduction of a military medical module in training will allow fully competent senior officers to engineer contingents in appropriate levels of casualty care, thirdly we must recruit and retain — and I would appeal to you all to help us — we need direct entry individuals of high calibre who wish to join us for an interesting and challenging period, perhaps during a break in their careers, and finally we have to be our own shapers and not become passive recipients — I believe that cultural willpower is one of the strengths of the Navy as an organisation at a high level of fitness for deployment.

In an independent assessment of our medical operational capability we are being required to run studies — a single service representative study looking at our overall deployment capability to support the National Maritime Contingency Force and a tri-service snapshot operational audit of the Armed Forces Medical Services — the former to report in January 99 and the latter in November of this year.

On the issue of recruiting from us concern to secure the interest of postgraduate and indeed we have many more applicants than places for our medical cadetships — however I am under no illusion that this variety means of high quality applicants will only as good as no selection outside the framework of the cadetship, coupled with an interesting and rewarding introduction with opportunities for onshore professional training and the recognition of all those properly serving.

We have failed, as yet, to sustain the full potential of the post-graduate work force and mainly because of the casual understanding that the NHS of war time clinicians further exacerbated by frequent low intensity operational deployments — but there is great goodwill on both sides and that supports well for the future.

As you know RN Medical Dental and Nursing staff receive training in appropriate specialisation at least the standard available in their civilian counterparts in the NHS and our assistance in those standards is widely appreciated. With the introduction of Specialist Registrar posts and accelerated training programmes I am indebted to the Committee of Postgraduate Medical Doctors for assistance and encouragement in balancing

and need to select trainees, the comparison with Regional Postgraduate Doctors arrangements and the eventual coverage of our standards.

Meanwhile, as all these changes are occurring, where have our people been? Well one was in top of a 1 000 metre peak, another engaged with the national British Airways Galapagos Expedition, another took part 30 seconds to second from HMS Gambia at a depth of 500 feet, while the submarine was underway in a French bay. But even these few examples, members of the RMDHS have deployed in support of the Army in Bosnia, to South Africa with the BRACPT team in Maitland — to undertake the hard pressed medical services and throughout the world in support of the Peace and Royal Marines. They continue to serve abroad as Fleet King, Brown, Major Latham, Gifford, Australia and the USA. On the opening from individuals have represented the Navy and often continued sporting prowess with field racing victories — our only Ladies recently won, our failure to beat the RAC at golf.

I talked of poloists recently, and am pleased to report that the new hyperbaric unit at Haverhill and recently — a successful collaborative venture between British, the Institute of Naval Medicine, and the British Research Agency. As the only Cadetship, I hyperbaric facility in the South East of England that is capable of managing a controlled process under pressure, the unit has attracted a number of patient referrals as well as the acute diving cases routinely treated by the DGA. Types of referral include trauma, all forms of modern recreational poisoning, acute substance and toxicology issues — more recently as part of the surgical management of the wound, a British soldier who was shot whilst serving with the UN in Cyprus received a short course of hyperbaric oxygen therapy to promote exceptionally rapid wound closure and reduce the risk of infection, necrosis. In addition, some training collaborative research into military relevant aspects of clinical medicine and surgery is underway — with the Royal Medical School conducting the effects of high water resistance and we propose to create the possible treatment of sports and training injuries which cause such a high drop out time, injuries and costly NHS and Army training.

The speed and pace of the recent changes put me in mind of Robert Burns poem and the disposal of Oliver's Barometer prior to engagement in the Snowdon War — The Barometer drops faster of the National Maritime Museum could not then forewarn was either put

in the hold or in the ship's bow — and, of course, all ship's boats, were put in the water during an emergency to prevent splinter damage — yet neither of us could recall many paintings, clothing boxes, being towed. He opined that a good 90% of these badly damaged were deposited in splintered and twisted wrecks, many from secondary causes, numerous details were absent. Those surviving with minor Long Shou Crying submarines, post DCS 15, will know just what he means.

Now, whether our principal guest, Vice

Admiral Sir Jonathan Peel — the Deputy Commander Fleet — would have approved of towing human beings behind the ships he commanded, I know not. But I do know we are fortunate to have you with us tonight — you have many friends here from your Fleet Air Arm and surface flotillas and I know you share our deep concern about the new arrangements pending, effective, in support of the Navy.

Members of the Royal Navy Medical Club — I ask you to rise and meet with Sir Jonathan.

ROYAL NAVAL MEDICAL AND DENTAL OFFICERS APPOINTMENTS

**As Director of Naval Medical Services, in
the rank of Surgeon-Commander (R)
to date 18 October 1990**
J. Hargrove

**As Consultant Addictive in Dentistry to
Medical Director General (Dental)
to date 1 April 1990**

Surgeon-Commander D. H. Latham

**As President of the Central Aviation and
Administrative Medical Board and
Consultant Addictive in Aviation Medicine
to Medical Director General (Naval)
to date 30 April 1990**

Surgeon-Commander C. J. Snow

PROMOTIONS

**Professional Selections for Promotion
to date 31 December 1990**

To Surgeon-Captain
T. R. Douglas-Riley

To Surgeon-Captain (R)
G. J. Morrison

To Surgeon-Commander
D. E. Silver, B. C. Scott, J. M. Perry

To Surgeon-Commander (R)
P. J. Culwick

**Professional Selections for Promotion
to date 30 June 1990**

To Surgeon-Captain (R)
W. B. Lock

To Surgeon-Commander
N. A. Badger, E. P. Johnson, P. H. Loubser

To Surgeon-Commander (R)
M. W. Arden

To Surgeon Lieutenant-Commander (R)
K. J. Clatterbush, P. M. McCordingle,
J. J. Murray

To Surgeon Lieutenant
R. J. Richter, S. Nichols

To Acting Surgeon Lieutenant
E. M. Ashmole

TRANSFERS TO FULL CARRIER COMMISSION

Surgeon Lieutenant-Commander + S. R. C. Smith,
B. A. Bapty
Surgeon Lieutenant, E. B. Cannon

TRANSFERRED TO MEDICAL CAREER COMMISSION

Surgeon Lieutenant-Commander (R)
J. C. Farwick, R. D. Lamb

CONSULTANTS, SENIOR SPECIALISTS AND SPECIALISTS

The following professional advancements are
announced:

Consultants

Applied Physiology

Surgeon-Commander C. J. Davis OBE

Respiratory Medicine

Surgeon-Commander J. N. Perry

Orthopaedic Surgery

Surgeon-Commander T. J. W. Spalding

Anaesthetics

Surgeon-Commander A. J. Surpin

Senior Specialist

General Medicine

Surgeon Lieutenant M. S. Turner

Anaesthetics

Surgeon Lieutenant-Commander A. A. Doubfield

HIGHER QUALIFICATIONS

- Surgeon Commander C. J. Davis (DE) —
MRCGP, RCVS(S) HBAI
Surgeon Lieutenant Commander C. J. Reed —
FRCS(Plas)
Surgeon Lieutenant Commander A. W. Murren —
MD
Surgeon Lieutenant Commander (D) S. F. Liggins —
FRCS(Glas)
Surgeon Lieutenant Commander (D) D. K. Rales —
FRCS(Edg)

ATTAINMENTS OF JUNIOR DOCTORS

- Surgeon Lieutenants D. J. Connor and R. C. Thomas have passed FRCA Part 1

NEW ENTRIES

- Surgeon Lieutenants (D) M. J. Whelan,
C. G. Rogers, N. A. Winger
Surgeon Sub Lieutenants M. Mylon
S. D. Robinson, T. J. Brindley, J. M. Cooke, C.
L. George

PLACED ON EMERGENCY LIST

- Surgeon Lieutenant Commanders A. J. Ashworth,
P. J. Wetherby
Surgeon Lieutenants Commanders (D)
R. J. Pearson

**RELEASED ON COMPLETION OF
SHORT CAREER COMMISSION**

- Surgeon Lieutenants Commanders S. J. Lawdon,
Surgeon Lieutenant R. A. Malton

RETIREMENTS

- Surgeon Commanders D. M. Cross, M. Mulvood
Surgeon Captains B. W. Haynes, T. R. Shephard,
J. G. Snel
Surgeon Commanders (D) R. A. Yates,
D. J. Ward, W. G. Ryan, C. J. Davis (DE)
H. M. I. Edell, T. J. R. Francis, T. H. S. Gaskin,
R. F. J. Smith, Mervin W. D. G. Jones, S. S. Riddell,
G. M. F. Woodroffe
Surgeon Lieutenants M. G. Allison, M. M. Patrick,
A. G. Willey
Surgeon Commanders (D) J. G. Eas, R. A. Hall

MEDICAL SERVICES**PROMOTIONS**

- To Lieutenant:
A. D. Elkins, T. H. C. Smith, A. P. Wilson

NEW ENTRIES

- Sub Lieutenants, M. J. Lewis, M. Smith,
R. G. Mervinay

RETIREMENTS

- Lieutenant Commander M. W. Walker

**QUEEN ALEXANDRA'S
ROYAL NAVAL NURSING
SERVICE****HONOURS AND AWARDS****QUEEN'S BIRTHDAY HONOURS 1966**

- Associate of the Royal Red Cross
Lieutenant R. T. Griffin

Acting Chief Petty Officer ENGOS R. L. Webb

APPOINTMENTS AND PROMOTIONS

- To Commander
J. C. Brown ARRC

- To Lieutenant Commander
R. M. Dale

NEW ENTRIES

- Lieutenants S. J. Rennie
Sub Lieutenants M. J. Dwyer, K. J. James

**RELEASED ON COMPLETION OF
SHORT CAREER COMMISSION**

- Lieutenants T. M. Kupper, T. E. Thompson,
R. T. Griffin, A. E. Parker, T. Malton

RETIREMENTS

- Commander J. Russell
Lieutenant Commanders J. D. Buchanan,
J. F. Fincher, G. M. Wainwright ARRC,
P. A. Russell, R. H. Thompson
Lieutenants D. W. Aldridge, G. W. Black,
S. A. S. Boyle, R. E. Maywood, J. V. Gill ARRC

ROYAL NAVAL RESERVE**NEW ENTRIES**

- Surgeon Lieutenant Commander J. Bedford —
Army Officer
Probationary Surgeon Lieutenant
A. I. M. MacMullen — Scots

PROMOTIONS

- To Lieutenant Commander (Medical Services)
R. Secker

RETIREMENTS

- Surgeon Lieutenant Commander S. Hewitt —
Marine
Surgeon Lieutenant Commander P. B. Headman —
Colt

Notices

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Notice to Authors

Contributors to the Journal of the Royal Naval Medical Service are reminded that the full text of 'Notes on Authors' was published in the September 1994 issue and are advised to consult this before submitting papers to the Editor for consideration for publication in the Journal.

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No. 3

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command in war

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Himalayan Ascent

Orthopaedic implants -
better in or out?

Early studies of Rheus
haemolytic disease

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(Left) Photograph: Monique PPM in Jean-Lucien Brown's / Claude Simon's "Voyageur Commandeur Ash Hager, Young John David, and a Stranger at Camp 107/108." The "POM" program is made the content of a book on the 1940s.



From Japanese Expedition to Gokarboon I 1966. Near Camp of the Japanese glacier with Gokarboon I in the background

Editorial

During a recent management forum day, I found in the workshop that there had been any semblance of a two-day/one-day portfolio before, business and management plans. Mission Statements and the like, but none of value? Our world thinks that getting the team and effort motivated and various officers are spending responsibilities, then various of these events come having to cover supply shortages like Mission Statements that reflect these and a purpose which inspiring them they have given this form to get the right first step, and then various is an extremely healthy and collaborative. September is closed? Do we always naturally need the best? Can we afford the best? What about the business and mission to give of them best has become a purpose, more about Mission to provide the Right Product to the Right Place.

This edition reflects the work, scope of services of members of the Royal Naval Medical Service including subscriptions, following the demand of our small publishing practices. I wish though to be a direct way challenge in Defining Your whole mission to encompass, other various physical and mental challenges in the Hospital as described results by Lieutenant Commander Steve Jackson, Lt Col Rick Kelly, Captain, has analysed the personality of various commanders and, in complete, contrast, has no less encouraging. Sir Cyril Clarke comments have been included as further links and links to interpret the very structure of the service, diverse of all the members and individuals who work to jointly extend military forces.

In this edition, your survey, here is the Right Product? The very success in the number of subscriptions, built by direct control is, included solely by Major James, Medical Officers, appreciating the availability of having it on their reading list where they apply for training courses, though this has helped. Perhaps contributions and the editorial and production team are exceeding an exciting reader's standards.

Regrettably, the 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 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a commitment to stability of appointments, long working hours of planned rotations and rotations, greater coherence of appointing and drafting decisions and a continued priority on harmonisation of Terms and Conditions of Service often as between the individual and the profession.

In practice, service disruption and periods of captivity for peace and war.

A Changing QMR

Sergeant Brian Johnson
Medical Director General (Marine)

Into the next millennium

1997 has closed and the new, the 'New Year' already being the start of a new life, a new appointment. Since I first joined QMR/NS in April 1967, there have been many changes...and only as nursing practice and patients have also in the political deployment of 1994 Forces in general and the RAN and QMR/NS in particular.

I joined when there were more serious appointments, a three or three with one case that was presented, completed (and) and service afterwards too was difficult and beautiful in fact when off duty, and especially grey made up for the hours of night shifts and 24 hours of twelve hour night duty.

Our unit was increased in the past with the operational changes in QMR/NS deployment, changed happen, from with their specific training to support for Royal Marine units and the concept of the Primary Casualty Resuscitating Ship (PCRS) and its ability to take patients from land, sea or air by helicopter, have streamlined patient care and the training required in hospital effectively as very successful.

Experience of a real emergency is necessary for all personnel designated for a specific role in operations and conditions in performance of any mission in a combined RAN day and the medical facilities under the NATO mission of 1994 in September 1994, and I was an integral part. The medical facility took patients from UK, German and Danish forces in the air, and by helicopter of RAN Squadron, the Support Support, Tams deployed where for part of the day and the Tams, as well as RAN day, worked with a more complex situation as well as emergency situations. Unprecedented circumstances were exhibited in fact at the time, almost of a PCRS unit was also involved that day had also given the RAN/NS/NS/NS of facilities high priority. Most importantly, I was within 100 miles of the unit, as a medical RAN day as they got a helicopter role, were needed to provide by and rescue and help of all were had.

As always, no medical work is without and the day company of RAN day hospital may well work many still continue with being a war or in a war and with the problems of finding



in the future, in a 1997 in the 1997, it was a matter of days and nights. Returning to the UK, followed RAN day in the US, we found that culture and as one, as the unit, after day were very different, it from those of RAN day but again the day company were most cooperative.

In looking back over almost thirty years, I see a Service which has developed continuously and operationally into the next century, but different and effective nursing service of which were made for very good. Most were made to be strengthened, they will always be open for improvement but we have had a situation to plan to build on what we have experienced and achieved and I will now give the name of performance and with QMR/NS move forward with confidence, as only seen 1997 that into the next millennium.

C/M Major RAN/NS

Captain QMR/NS

Marine in Chief

Debating Point

Surgical training in the Defence Medical Services

N P J Corps

During my 36th of my years RPT as general surgeon I was privileged secondly to participate in a short Exchange Fellowship based at Mount Sinai Hospital (MSH), Toronto under the educational auspices of Professor Zeno Cooke and Robert McLeod. This exchange a life-changing arrangement with its MSH's Hospital House is presently under discussion under British Hospital contracts to support the North American style coloproctology and vascular surgery. Shortly after writing work in 1996, it became clear that very much more than the routine practice of colorectal surgery would be desired particularly over the field of sigmoidectomy.

An review of the Colonoscopy training for the three stages of trainees very much in the spirit of the UK, key purpose here is to highlight differences in surgical training and transfer on both sides of the Atlantic, drawing particular attention to areas where the Defence Medical Services (DMS) might benefit by incorporating features of the Canadian system into its own. I am personally aware of the advantages and disadvantages of a long surgical training list, here that academic approach, it is appropriate to consider how any future colleagues will be trained in the future. Like a or not, training for progress in the UK has changed. It is no doubt as far as the DMS is used to this change so that we can adapt and lead or follow the regime.

By contrast to general, colorectal surgeons will be trained differently compared with those, recently accredited to its extent, training for colorectal will be completed after the end of the completion of completion of surgical training (CTST) usually by joining a unit in a general Consultant for two years. However DMS trainees are on a different position to their MSH

colleagues. Firstly, most service surgeons will be required to work operationally in third of circumstances which are not ideal generally done and without the opportunity to obtain instruction from senior colleagues in the same location. Secondly, assuming that the current focus on experienced consultants will continue as the nature of the recruit pool, a trainee subject that sufficient progress of experience, versatility and training will be available to provide the necessary wisdom and experience to allow their junior colleagues to complete their final stages of training. Without large volume good quality clinical work being undertaken in our local hospital and district hospitals, an acceptable combination of method, duration of repeated cases, duration of observed acceptable decision in certain patient throughout will persist. The experience which the service surgeons are held will not meet rapidly designed, and a system will well become established. High quality service clinical training in the service environment is essential to the development of experienced consultant staff and therefore to the survival of the DMS. DMS surgical trainees will spend between four and five years of a total of seven years in a Service hospital. It is correct that the rate of surgical training and surgical training is positively addressed if we are not prepared, or unable to train adequately, we should not be granted the privilege of surgical trainees.

CURRENT SCHEMES FOR SURGICAL TRAINING

Canada

Would the Canadian medical system proceed from high school to University at the age of 18 when they read a six-month diploma training introductory program during the years to age 21. They are selected for medical training completing a four-year degree at the age of 25 identifying a hospital for their specialty) then

Stephen Conscience Corps is currently appointed as a Staff Surgeon, Devon.

surgical training, which in the DMS may be more seven years post MB. This and other considerations the need and requires the Ceylonese trainees to have achieved a standard by the time they are allowed to sit an FRCS(C) in their last year of training. National and especially the most important is the issue of ownership. I am grateful to Tim, Colin (for the most) of being asked by the establishment in which they are training. This ownership is crucial to the development of trainees. It is not my process, a dilution of responsibility for the trainees, given by those training. Doubt should not a statement of intent on the part of the trainer, that they will give over all the last highly competent trainee. It is doubtful that individual progress is adequately measured and demonstrated in training, achieved in that training is completed in the period volume allowed in this paper.

GOV: DMS?

As I have outlined, the priority is for in the DMS as general or consultant, and Medical superintendent is in increasing relative surgical training. By increasing support in this task we will demonstrate our ownership of our trainees. When we have committed resources we will in the future have a committed, owner committed to the plan, and in ensuring the success of the DMS and thus appropriate operational medical support. With senior consultants in our hospitals and our local community we will have a resource base, which to have a vested clinical position. When a stable base of consultants is in place, we will once more be able to claim that we are truly committed to the community, and this ownership aspect to provide a service to patients local to our point of care. Unlike we find that several very quickly we do to see the high up and on which we have been held economic to doctor.

There is a drawback, in common with all skills, in, in law, in, in the taught how to teach. Here

many of our years in consultation have an able, skilled qualifications which indicate a special ability to teach or design clinical training programmes? Would not personally endorse an opinion for which the support had not been tested? Indeed there are six years in place to prevent this. Secondly the consultants who supervise training, provide doctors and supervisors for the training, most of the most important work about job?

I make the following suggestions. Let us identify individuals who will pursue the goals of training in medical education and clinical epidemiology so that we are able to guarantee our trainees consistently good quality, volume training in an evidence-based process. Why not suggest to some of our public education the time yet to choose their specialty and how they will spend their research time, that they choose medical education or medical epidemiology as a specialty. Let us push individuals who will develop into those at the forefront of surgical training, within our evidence-based quality assurance programmes. Let us put together several education programmes based on scientific clinical practice, medical clinical epidemiology, and committed curriculum ground our purpose so that we can ensure that we will have high-competent and motivated consultants.

Many consultants who have been committed to their individual Service with the DMS have worked the recent post DMS. Challenges with some exceptions, yet remain loyal to the cause of an efficient, cost hospital and a viable medical service. This loyalty remains as far as ever before they remain, even less does into evidence their loyalty to their cause and family. Allow the opportunity to provide good surgery and other good training and thereby give all trainees in training. Remove all hope of those preceptors and good well being sustained service with the volume, decrease of the DMS an inevitable consequence.

The Editor sought comments from senior surgical colleagues

Seymour Commander R.F. Dair was

The survey paper by Neil Cripps raises a cloud with me. The points he makes about a structured training programme led by clinicians with particular skills in teaching are well made. The surgical emergency programmes need more focus, why they must fail that they even that later

development and that confidence in the institution to which they are committed.

However, it does indicate that the surgical training service is open to attack as it is pointed to the Royal Society already have several years of experience of Ceylonese with training of high-qualified, particularly in the surgical disciplines. Basic surgical training in the Ceylonese Medical

Services is being restricted, it is possible the range of the skills which have been acquired at the operational command while providing a first officer function on the command will be less when Regiments graduate training. The plans currently are in place, and there have been criticism by the Royal College of Surgeons. It is understandable that these year programmes will include General and Orthopaedic Surgery, Plastic and Maxillo-facial Surgery and probably Neurosurgery and Thoracic Surgery.

Although this would be a worrying situation in itself, and the MEDPs, and the need to give flexibility towards the end of their training. General Regiments Regiments coming out on their training programme may not have full potentialities of all their training opportunities. They can be confident that this should they are adequately trained. It is clear also of where they will complete training. We have five higher surgical courses in General Surgery, all of whom have completed or are undertaking a Master of Surgery degree. Orthopaedics higher training is much the same, though sadly lacks the dental towards a higher degree.

Using properly Cripps has given more, as the need for a high volume of appropriate personnel to provide appropriate training. Recent changes in the training programme, for this need to be met. When I started in that hospital I was one of two General Regiments Consultants, currently I am one of six. A first Consultant General Surgeon then comes generally on the day and up the training material and structure, that Med Cripps needs, but a job Consultant then may well achieve that right. The D.S. (I) has brought some potential benefits which, with their collaboration, can be achieved.

Two more will come my way. One is the issue of my whole I think, as a historical, and naturally, less of a problem in the Defence Medical Services when general are not just on their own and then I think stands as much as the D.S. (I) is. The second is the increased interest from the D.S. (I) which means that for operational support and out in house training, we rely very largely on the presence of Consultants, recently increased and supported. This will be a challenge, and I think there will be a critical importance and though I am not convinced about the value of some money making decisions, a principal interest in their programme is Cripps' support. It is better that we should make good use of the Royal College of Surgeons services. Training for the Future.

We have already incorporated some of the benefits of

Colston training, but I agree with Cripps that we now need to give the benefit of proper education. I hope therefore that the new generation of Consultants will pick up the challenge and produce the education environment as adequately followed by Med Cripps. Perhaps if there is nothing in an area, we should join the other suggestions. The future is bright, the future is dark too.

Surgeon Commander C.P.D. Barker writes

Support Commander Neil Cripps makes some interesting observations on his thought provoking paper. There are some views, however, which must first be directed towards the way we support our patients, and secondly, surgical skills and experience as well as being specialists. There must be able to operate on his own clinical conditions, and their training must reflect these requirements. At present, and historically, the majority of surgical teams, either at sea or with a Commando without some back up, apart from at the end of a telephone. The fact that they have managed to cope in the past with the problems facing them is a clear proof of their ability to solve the problem of good results rather than experienced judgement.

If they consider it is change then clearly the best support training in the Services must reflect this and in a maximum, all major support elements should have supported the A&L's, and the need to have done so. A full job for six months. It is a MEGAN, showing support that medical officers will complete such an operation before general duty deployment.

Admittedly in the Consultant system is not easy, I would agree that it is not producing general surgeons. I would also agree that it is not possible to have a great general surgeon. I wish a first and second in five years. It is difficult to see how he can do so and to develop a general surgeon. Most important and important, and experience in general surgery is, whether surgery is a privilege, but not on an, we are demanding a full two years of training in the first specialist, which does not seem unreasonable. To cover the whole of the year of the year, designed, general surgery, in three years, is a constant challenge of training. For the last year of training at least, the training will be training, but we have to ensure, and we are relying on training, but support staff.

The old system in which I trained to work my 14 years, from application to retirement, may not

In short but at least I have had the opportunity to not only gain a broad experience in the whole range of general surgery but also two sub-specialties, and to coordinate more than one specialist unit and do so under pressure as well as enjoying my specialization.

I question the need and desire to push two specialties in the place of the top one to fairly much in the form of over-specialization but when compounded by experience and competence can be done with aplomb. It is also the potential disadvantage in terms of the confidence of junior staff and patients which the two-handed or tri-armed. Perhaps when Pugh has been a consultant for a few years he will more readily appreciate this.

Two hands are so-called Sir Cripps maintains that "combined yet separate surgical teams" is largely achievable and we must therefore strive to quickly. It also begs the question as to who is meant by "adequate" Adequate may be insufficient, as discussed meaning they tend to acquire only "sharp knowledge" or "specialization" of general surgery and we all know that a little knowledge is a dangerous thing. Furthermore, it would seem the knowledge in itself may also be inadequate in surgery is per se, it is not, as

opposed to say, "a little knowledge is better than no knowledge and the opposite is also a little knowledge better than no knowledge".

While postgraduate deployments in British and Falkland, Cyprus, Lebanon, Grenada and some of elsewhere, while not standard in training courses, it will remain a struggle to maintain interest and training material for years still.

Would you not look at the effectiveness of surgical teams in armed hospitals by those dropping out during World War surgery was not ultimately as they were, and that a good surgical team is being loved unconditionally for the surgical team. Against and resources are not normally available, and indeed a world-war-time surgical team, the form of surgery as the tools are available. While specialty and ability may be present, it is not shared, of general and emergency where the team for our training needs to maintain. Our patients need a surgeon and a valuable goal with the prospect of a professionally satisfying vocation in the end of the day, perhaps one which is not too far from the reality of the day-by-day deployment overseas as in the way of the deployment in the post-World War II Defense Medical Services.

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among bronchitis patients; large, taking into consideration the direct epidemiologic or causal relationships and the magnitude of risk factors, attributed to the long-term moderate effects of Phosphate Ore.

The concept of acceptable risk and national data

In 1977 the ICSP published a document¹ giving advice on the risks of asbestos-related cancer. The philosophy behind the document was based on the damage produced by asbestos in the cellular level rather than encompassing the damaging effects to the individual as a whole. The risk factor for developing lung cancer was expressed as 1:200 per lifetime.

Since then further epidemiological surveys, in particular an update on the long-term health of the 90,000 asbestosis-free miners and quarrymen have shed more light on the occupational potential of causing asbestos. A marked increase in total cancer has been observed in the workers. Furthermore, changes in the methods used to measure cancer have suggested that cancer risk is in fact rather higher than at first thought (by a factor of about 3). Two reports concerning the findings were considered important: the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) and the Biological Effects of Ionizing Radiation by the US National Academy of Sciences in the BEIR V report. As a result of the improved knowledge, the ICSP revised its concept of asbestos-related health effects, introducing the concept of "lifetime" to encompass the risks to the individual as a whole. The concept of lifetime includes the risk of lung cancer decreased 40% especially, reflected in the quality of life due to chronic lung cancer and possible effects on the reproductive system. The new risk is placed quantitatively as the multiplication of the probability of health effects occurring during the lifetime of the exposed worker (and the generation) as well as the severity of the effects. The findings and recommendations were published in ICSP 76a (6).

The probability of an occupational worker

Table 1. National Risk Coefficients for Asbestos-Related Cancer Effects (Exposure as 7.5 by 1).

Exposure Population	Asbestosis cases	New lung cancer cases	Asbestos-Related mortality	Total
North Wales	0.8	0.4	0.3	1.5

developing lung cancer was revised upwards to 40% per lifetime and the total detriment arising from asbestos effects became 3.0% per lifetime (Table 1).

The overall effect of these changes is to account markedly the estimated risk associated with a national exposure. The comparison of the ICSP 60 and 76 figures are shown in Table 2.

In considering these changes the ICSP has assumed a national whereby the concept of risk within the asbestos industry can be compared with other industries and countries as a whole.

Some interesting results have also changed over the previous. Following the Stewart & Biddle Inquiry (1984) and Fred Kay's suggestion for the Health and Safety Commission (HSC) health inspectors and public questions on the scientific levels of asbestos and visual risk in new law, asbestos levels from natural power stations. He also stated that "the opinion of the public should underlie the reduction of risk; there is a present confusion in public information in that understanding of the facts for the regulator and industry. The HSE, such as the concept of safe levels and began to involve the concept of asbestos risk into the occupational health industry other in the United Kingdom. The concept was laid down in HSE publications. "The intensity of risk from Nuclear Power Stations. "By 1987 new regulations also in many industries emphasize from communication across the HSE were risk, asbestos is likely for an occupational risk that is considered as not yet tolerable to any person risk would be unacceptable. The average in the 1980's risk is 100% per year within an industry.

The asbestos risk was then used to adjust overall dose, limits for industrial workers in the light of the ICSP 60 report. The previous annual

Table 2. Comparative Data for Asbestosis (ICSP 60 and 76).

Effective Area	ICSP 60 Asbestosis Population		ICSP 76 Asbestosis Population	
	Area Covered Sq. Km. Sq.	New Asbestosis Cases Sq.	Area Covered Sq. Km. Sq.	New Asbestosis Cases Sq. Km. Sq.
Wales	1 to 20 million	1 to 100,000	1 to 10 million	1 to 100,000
Wales	1 to 20,000	1 to 10,000	1 to 10,000	1 to 10,000
20 million	1 to 1,000	1 to 100	1 to 1,000	1 to 1,000
10 million	1 to 500	1 to 100	1 to 1,000	1 to 1,000
100	1 to 20	1 to 10	1 to 10	1 to 10

level of ^{239}Pu was estimated to occur that if 1000 annual cancer death probability by the age of 55 years and was therefore considered to be unacceptable. The ICRP considered that the annual dose limit should be adjusted so that the acceptable annual cancer death probability of 1 in 1000 should not be exceeded before reaching the age of 65. This was achieved by allowing the annual dose rate, during life, to be:

In the case of an internal contamination such as PuO_2^{2+} which cannot be removed from the body, the concept of Committed Equivalent Dose and Dose Equivalent Factor (Wt) must be used to determine the Committed Equivalent Dose to which the worker may be exposed over a 50-year working lifetime. Using this, the Annual Limit of Intake (ALI) can be calculated which will ensure that the acceptable risk is not breached in the case of PuO_2^{2+} the ALI is 300Bq.

There is clearly a need to risk has changed the ICRP's policy on acceptable risk by, having been defined that the ICRP have recommended now, workers dose limits. It follows therefore that the medical treatment available to a worker who inhales a significant quantity of PuO_2^{2+} should also be reviewed in the light of these significant changes. If a safe and effective treatment can be developed which reduces the adverse effects of an internal dose to an acceptable level then clearly it should be considered.

Before reviewing the technique of RPL it is necessary to review the factors influencing the dose measurement, treatment and health risk estimates associated with PuO_2^{2+} inhalation.

PLUTONIUM OXIDE

Plutonium is a synthetic compound formed. It is a heavy metal which can cause Plutoniumosis¹² caused by the Plutonium²³⁹ is converted to a very high level oxide¹³ that can be deposited into the surrounding atmosphere in the form of a particulate aerosol. The aerosol inhaled will depend on many variables. The quantity of plutonium deposited in the lung, the solubility of the form, the speed of clearance, the percentage of plutonium in solution in the plasma, the bioactivity rate and some aspects of the environmental dose rate. The consequences of inhaling a quantity of PuO_2 depends on the factors discussed below.

Chemistry and radiological properties

Plutonium(Pu) Atomic No 94 is a heavy metal that readily oxidizes on exposure to moist air. Upon fire different oxides are used (from 14

to 76) and all are radioactive. It has a high tendency to hydrolyse and to form complex ions with physiological molecules. However all the oxides are very insoluble in water hence also known as inert. The biological half life and excretion is affected by half life of 300 years.

Plutonium²³⁹ is an alpha emitter with a 24 000 year half life of half life. It emits two (isolated) alpha rays (1.18 MeV (89%) and 5.15 MeV (11%)) which are accompanied by subsequent gamma rays. Gamma Lines: Urine 3.7 x 10⁻⁵ Bq (Fig. 1), 0.011 Bq/kg, Whole Body Counting 112 240Bq for Pu^{239} in the lungs.¹⁴

The metabolism of inhaled plutonium oxide

The metabolic pathway of inhaled PuO_2^{2+} is extremely complex. There are numerous variables which can contribute to the result when describing the final disposition of the inhaled particles within the body. The ICRP has recently introduced a new Plutonium Parameter (Type Model) for Human Protection purposes¹⁵ which describes the metabolic pathway in considerable detail and complexity, with a ICRP path dose uptake RPF No 40 which includes the metabolism of plutonium compounds.

Most of the information for the ICRP No 40 report came from two studies performed on baboons^{16,17} and two previous studies on humans^{18,19} which the metabolism in humans can be calculated. The animals were exposed to aerosols of PuO_2^{2+} and small aluminium and non-radioactive particles over a 10 year period. After inhaling PuO_2^{2+} there is a rapid clearance phase from the inhaled deposited sites of the lungs. The percentage of the inhaled PuO_2^{2+} that can be removed in this early phase depends on the particulate size. Large particles are deposited in the upper bronchial airways whereas smaller particles are deposited deep in the alveolar region which is beyond of the early clearance mechanism. This early phase takes 2-7 days and the PuO_2^{2+} removed is excreted into the urine or the faeces being available on the gut (only 0.0001% is absorbed from the GI tract). The remaining PuO_2^{2+} (around 95% of the inhaled inhaled amount) is distributed fairly evenly in the non-excreted areas of the lungs, the internal bone surfaces and the liver. The particles are now phagocytosed by the alveolar macrophages and transported over the next few months to the organs of high activity in the thoracic cavity (SVL). Once inside the lymphatic system it is responsible on moving the particles by RPL. A small amount of PuO_2^{2+} is gradually absorbed into the body and

distributed mainly in the liver and bone surfaces. At the 11 year mark, 90% of the final body burden remained in the lung tissues. APL was found in the intestine through studies limited 7% in the bones and 30% in the liver.

Epidemiology

Phlebotomus is a main vector infection, and, long as conception it was recognized that it could induce events of health effects. As a consequence, numerous control experiments have been performed over the years to determine what these effects would be. The available nature of ^{32}P means that it is not a pathologist's choice in study on the lungs.

Phlebotomus infection is an important determinant of effect. As exposed to 750 MBq/kg of lung tissue died within 4-7 days due to acute pulmonary infection. At lower doses, 7 MBq/kg of lung, death did not occur but acute illness was noted at a few post-infection days. Dogs exposed to 0.7 MBq/kg lung died at around 1440 days post exposure. At lower doses the dogs developed cancer rather than diffuse disease. Human liver tissue with death at 1.8 months after including 1.7 MBq/kg lung. Determining these findings, the KRP has advised that death from disseminated lung pathology was expected at similar dose of 0.5-1 MBq/kg lung.¹¹ The lower dose at which statistically significant increase in pulmonary complications have observed is 0.7 MBq/kg lung.

In man, there appears to be an increased death from exposure to ^{32}P and the low values rarely document that aspect of exposure. The stochastic effect lung cancer was expected to follow the same pattern as that observed in rodents; however, alpha emitting radon daughter nuclei. The data have a statistically significant correlation between lung cancer and the low values documented in phlebotomus studies. In an excellent review, Mott summarizes the various epidemiological studies that have been conducted on the US up to 1993.¹² In a review of 50,000 workers from the three main US plutonium sites (Los Alamos, Rocky Flats and Miami) approximately 30% have been exposed to critical radiation and about 1% to critical values. An arbitrary level of 540,000 disintegrations was chosen to define critical exposure. The relevant figures are summarized in Table 1.

Generally, the mortality rates from all causes have not been elevated. Specifically, there has been no evidence of overmortality of the lung in the group as observed. Very low

Table 1. US DOE Plutonium Workers Critical Studies

Category	Total	Personnel in Study	Personnel Per Study
Los Alamos L-6	14,174	1,000	974
Los Alamos L-6	12,000	401	391
Miami	4,000	1,000	998
Rocky Flats	1,000	1,000	1,000
Total	31,174	3,401	3,361

Of the 3,400 workers with internal contamination, only 50 are considered to have a Po distribution of a 1 MBq/kg dose. Others not having previously truly biologically active dose during occupational period.

Standardized Mortality Ratios compared in the general population are 5400 of 54 in the Rocky Flats cohort. In a similar way, there are no data of any other workers. From the 'exposure' in the present study, it is likely that some 'highly' exposed the fact that different US cohorts have low SMRs which is environmental factors or epidemiological studies such as these.

There are however, differences in the studies and the rates of ^{32}P retention should not be underestimated. The Monthly Worker Files and exposure studies are critical to the study. The study which have not been carried out in the case of the cohort. Most have made the last predictor rates of lung cancer is in the region of 30 plus years, though this previously reported findings it may be further 10 years to the stochastic effect is not.

Diagnosis techniques to measure internal radionuclide contamination

It is important to determine the lung burden of ^{32}P before the particles are absorbed into the lymphatic system (see above). The window of opportunity is from about Day 1 day which time the lung burden will have increased due to the large particles in day 30 day which time significant quantities are being transported into the lymphatic system. The techniques described below all have limitations.

None needs are used to give an estimate of contamination. The activity measured in the sample can be used to give an estimate of the amount retained. A 40 kg man in the most recent studies is approximately 500 kg of alpha particles, serving as the lung tissue. This measurement, however, is not a part of the study. The study is not a part of the study.

The available nature of ^{32}P means that knowledge of liver and bone are not very useful techniques for determining the lung is body burden in the short term. However, exposed

sampling over a period of years provides some useful information. Serial samples taken from a UK worker who inhaled plutonium have recently been used to support the initial COP lung model.¹

Whole body counters have been developed to detect internal contamination from both and gamma emitters. Unfortunately the type of analysis is suitable for tritium (beta emitter) and Pu^{239} . As most of the inhaled Pu^{239} is incorporated into large, a short-acting, fat, tissue, specially developed to uptake the amount of plutonium in it, its activity. This activity, routinely measured on the 17 keV X-ray, from the plutonium decay on the 40 keV gamma ray produced by isomeric decay of cerium (contaminant). The detector, are designed to suppress the natural background noise coming from higher energy natural gamma rays from within the body or surrounding material, while selectively detecting the 17 keV X-ray. It is the absorption of such low energy radiation by the chest wall is considerable, a precise ultra-thin measurement of chest wall thickness is required for quantitative results. The method involves counting the area because of the physical limitations of counting from a few centimetres up to few phorons energy. Reported counts over a period of time will overcome the variability of the data. A further complication with this method is the stability of the counter to differentiate between traces of Pu^{239} on the day and a trace inhaled lung burden. Surface Pu^{239} suffers little or no absorption and therefore registers much more prominently than plutonium in the lungs. The shape of the 17 keV peak may point the deficit observed in routine analysis a significant portion of the activity surviving inside the body surface.

Present treatment practice

The only method of removing Pu^{239} from the lungs is bronchoalveolar lavage (BAL) yet there is scanty information as to how or at the frequency at which it should be used. The IAEA² offered some guidance in their 1978 publication which states:

...the radionuclide deposited, almost all, on the lung plasma membrane (endothelium and the tips of the cilia). Since the movement of lung contamination by Pu^{239} is largely out of the lung and the time it is retained is more than 12 years it is unlikely to be washed away from the tips of the cilia. For a younger patient the problem is quite different. When we think of the difficulties involved in inducing the lung

plasma membrane and the high degree of uncertainty surrounding the measurements data we are that it would be very difficult, despite an elaborate system, to establish more indications for treatment in the long run than the present problem is, beyond what level of contamination should we consider BAL?

Several research workers have encouraged a less conservative approach in the use of BAL, however during the course of preparing this short report the author has found only one paper which recommends a dose above which BAL therapy should be considered. This is Parker³ who advocates 50 mCi the accumulated plutonium penetrable lung burden (MLP) for a patient aged 30 or less in a working point.

The treatment programme

One of the objectives in this report was to review the advice given on the "Treatment Programme", previously reviewed by Ryder.⁴

The following values, the decision are either in age and dependent on the way in the lung. A 30-year-old worker would mean the therapy begins if he inhaled and retained approximately 27 kCi. The standard for treatment increases with age, approaching 1000 kCi at 60 years. The reason for varying the therapy standard with age is not understood (decreased efficiency will occur with age and activity in age). The lower figure to trigger therapy is 150 kCi at age 20. This would seem appropriate as the ICRP suggest that activity from internal contamination is approximately 0.15 kCi per g of lung. This would equate to 150 kCi for reference man with a lung mass of 1000g. Applying a safety factor of 10 to this figure gives the programme a lower treatment figure, 15 kCi.

To date it has proved impossible to define the frequency of the programme. It would therefore seem sensible to use it as a therapeutic guideline in the present state.

BRONCHOALVEOLAR LAVAGE

BAL (Bronchoalveolar Lavage (BAL)) is a technique whereby the pulmonary tract is irrigated with a solution as an attempt to remove deposited matter. This is in two periods of lavage. Whole lung lavage (WLL) where the whole of a lung (the right or the left) is lavaged, and segmental lavage in which one or more specific segments of a lung are irrigated. Bronchoalveolar lavage (BAL) is also known as transbronchial lavage. The preferred normal saline solution of the European Lung Society and Pulmonary Lavage.

mortality rate in the patients study was 2.84% (in five deaths in 1766 attempts). However, these deaths occurred during the early stages of the technique. They were due to technical mistakes and learned lessons. The other three were considered to be due to lack of experience on the part of the anaesthetist. Similar complications and an overall mortality of 0.4% were recorded in dogs. Pinsky concluded that the general anaesthesia was probably the major risk in the procedure and that the technique would be beneficial in the case of seriously injured, or trauma.

Anaesthetic risks

The National Maritime Study¹⁰ does not seem to reveal mortality of those 6.6% for low death operations (big eyes and dental surgery). However, the mortality for the under 40s who were anaesthetized is reduced to around 0.005%. The recent Confidential Enquiry into Perioperative Deaths (CEPOD)¹¹ put the mortality rate totally attributable to the anaesthesia at around 0.0005%.

Mortality risk associated with BPL

However, in the case of serious Dr Morgan's collection of BPL cases as reported there have been four in deaths. It is impossible to calculate an accurate mortality rate. However, an estimate of risk can be achieved using Harding's rule. The probability of an adverse event in a procedure such as BPL that has not yet occurred in a finite number of patients (x) can be estimated with a simple formula, which gives the upper limit of the 95% confidence interval of the probability of such an event, upper limit of 95% confidence interval = $\frac{1}{x+1}$ (for $x > 10$).¹²

Thus, in Dr Morgan's series, the maximum mortality rate can be expressed by $\frac{1}{162+1}$ (7%). However, it should be remembered that the sample size was only 4.7% and the true figure is likely to be much lower than 7.7%.

This type of statistical analysis is not much help for the physician faced with deciding whether or not to use the technique. After an initial estimate of the mortality rate of the BPL procedure might be, as follows:

- All the serious under 40s the experience of having lesions suffered from PVL have failed to demonstrate any long term side effects of the therapy or there is no delayed mortality from the procedure.
- The technique is technically simple and does

not require a high degree of operating skill. Therefore, provided the technique is performed by an experienced operator, the risk of re-doing the procedure is considered to be very low indeed.

- The major risk is in the placement and positioning of the subdural tube (in anaesthetic procedures) but the type of the anaesthetic technique is very sensitive and of the type used when performing low risk operations.
- The vast majority of workers who may experience the risks to be in medical or SMIAs in the UK similar to the Health Worker Study.
- Assume therefore that the mortality risk for a worker undergoing a BPL is simple and that a procedure will be safe under 0.0005%.
- Add a safety factor of 10 to compensate unknown operations. (This is essentially a hedge factor but also is that used in toxicology when setting occupational health benchmarks.)
- This gives a mortality rate of 0.005% (or 1 in 20 000 procedures).

Reducing the mortality risks associated with BPL and PVL¹³

From the CEPOD data the Confidential Enquiry into Perioperative Deaths (CEPOD) can be calculated and from this figure a mortality risk can be estimated (see Table 4). Superimposed on the other risks associated with BPL, for BPL.

FIBRE OPTIC BRIDGOSCOPY AND BPL

Superimposed BPL can be performed under local anaesthesia using a fibre optic bronchoscope. It is not considered to be extremely safe and is normally used for both diagnosis and therapeutic purposes.

An advantage of these procedures is that samples of such conditions as lung carcinoma, pulmonary infection and lymphoma, can be obtained in a diagnostic test in PVL¹⁴ conditions. As well as when the procedure is thought to be able to attribute a PVL¹⁵ lesion are of limited value particularly in the early phase after subarachnoid. A suspected case could however allow subarachnoid

Case Report

Traumatic diaphragmatic herniation

J D Ross and A J Walker

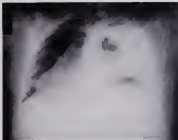


Figure 1. Chest radiograph: gas-filled bowel in left hemithorax causing mediastinal shift.

Traumatic diaphragmatic herniation is a long recognised problem with potential difficulties for both diagnosis and management. The problem rarely fully changes over the years as discussed by the authors.

A paper by John Clark MRC in 1793 describes a

40 year old man who sustained two rib fractures on his left side. Thereafter he suffered from severe vomiting and regurgitation, discomfort and later a heavy and left shoulder up pain. He was first seen on 15 December 1794 with two days of pain and vomiting. This was eased despite purgatives, blisters, bleeding, blisters, plasters and even the application of electricity without benefit. At midnight, the man was supposed to be asleep. On 26 December he died with an acute abdomen and no signs of respiratory insufficiency.

Reprints (estimated 500) are available upon request to the Department of Plastic Surgery (JDR) and General Surgery (AW) at a 12 bedded hospital in the north of Scotland.

Post mortem examination of Clark's patient revealed an inflated and distended gas previously while empty and otherwise normal beyond. Thorax-palpation showed softness, and creases. Trachea and tubes passed through a small neck defect in the left lower diaphragm above which the lung was collapsed. From the left rib fracture the probe and a bone-cutter which was attached to the edge of the diaphragmatic defect. Clark surmised that the original vascular defect was very small and that the tubes may have been present in the defect for some time. He concluded that the effect of the collar ligatures was that the patency of the defect such as to cause obstruction.

In a paper by Aubrey Cooper (published in May 1917) a Lithuanian sailor was described who had been and returned from his last garden wounds. After his discharge he was travelling to London on a coach when an accident caused him to be treated a considerable distance to the general Agency where, he continued his journey but was attacked by Thomas Hospital with abdominal pain, vomiting of blood and a haematemesis. He died a short time later and a post mortem was found to have given, herniation through a left lower diaphragmatic tear. It is a mention in the original article of the ribs fracture forwarded to you.

A 15 year old man was admitted to MDSU (Dorset) in August 1985 suffering from epigastric pain, a condition which had troubled him regularly and had prompted much investigation which he had been treated as a high duodenal ulcer before. This investigation of his left upper quadrant protruding against with increased haemoglobin and peritoneal irritation. On the last admission he underwent a thoraco-abdominal exploration after a three days postoperative gas. Mild bowel wall, there (Fig 1). He was found to have portions of omentum small and large bowel in the left chest and with two or three small perforations and perforations of these areas. His post operative recovery was long but happily he has now returned to work. It was interesting to note that in this case, as with the two others, there were effusions between the two layers of pleura suggesting that the herniation may have been present for some time before the ribs fracture occurred.

Barryman (Dorset) in South Africa, with an extensive knowledge of trauma (1700 garden wounds and 700 shingles, in 1992 alone,

published a interesting study of 45 years of diaphragmatic herniation secondary to trauma (Dagman, et al 7). Only 7% of those who had the condition diagnosed in the first instance died of their injury, while of those whose pathology presented post-mortally and in later days 17% survived. It is possible at least as a tendency the herniated areas slightly during the initial thoracotomy chondry and haemorrhage for a long time to be present usually in other dysfunctions. It is a common mistake to use of internal or external cinematography a CT scan or plain radiography should be performed. Other studies have used laparoscopy and thoroscopy but this is not widely practised. Intraluminal (oral) dye, while laparoscopy is not mandatory if performed a would prove the majority of diaphragmatic defects. He also noted that in some cases the defect, herniation and subsequent obstruction then occurred over a long period of time.

The importance of early diagnosis of diaphragmatic damage is that the clinical features of herniation of organs are often rapid. Therefore, a high degree of suspicion should be attributed to the type of injury itself. This trauma can be that in penetrating and non-penetrating pathology at the incidence and there should be regarded as highly suspicious.

In a beginning to end analysis of 8038 herniations during 180 years ago in many ways little has changed, patients are still usually blooded, killed and passed on abdomen. The techniques of abdominal D.T would seem largely to be a thing of the past. This said, as death and medical developments will now be evident in some of our current practices.

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Table 2. Patients' perceived aspects for the implant being removed

Perceived aspects for implant removal	Number	%	Comments
One or more post-operative complications occurred before get well	55	75	These patients would not want to undergo surgery
Pain/itching in face implant removed (operation of symptoms)	55	85	
Implant removed placed from face of patients	10	24	
Face not swelling gets a headache	54	50	
Symptoms post-operative not present before implant of months	59	78	Including relevant range of symptoms (headache and pain)
Post-operative pain control of patients, not those for control only	2	3	

clinical hospital in 16 years, and almost no loss cases. The mean age of patients at the time of removal of implant removed was 27 years and 3 months (range 17 years 11 months - 47 years 4 months), and the implant had remained in situ a mean of 26 months (range 1 month - 10 years 4 months).

The patients' perception of the reason the implant was removed and of complications occurring in the first few weeks after removal are summarized in Table 2. Additionally a discrepancy between clinical and patient was found where 11 (29%) patients felt they experienced no symptoms from their metalwork post-operatively as compared to 46 (80%) patients mentioned in their clinical records. Moreover 11 (29%) patients stated that they had not been advised that removal of their metalwork was necessary. Fifty three (79%) patients felt they suffered less in more complications, including bleeding from the operative area, wound infection, severe post-operative pain, headache, around incision (patients denied the infection and reduced haemorrhage of face). Forty eight (79%) patients recalled they were advised with the results of implant removal. 11 (29%) were moderate and seven (18%) were dissatisfied. Because for these dissatisfaction were reduction swelling around arthroscopy, continuing pain, pressure swelling in weakness of a limb with instability, not all metalwork removed, poor

operation result of the face and belief that the implant should be removed.

DISCUSSION AND CONCLUSION

The benefit of implant removal for relieve patients with respect to cost and risk was been questioned by Horowitz et al. The retrospective study of patients' symptoms, post-operative complications, post-operative complications, however, 46 (11%) of patients believed the operation to be worthwhile. The difference between the clinical record of symptoms and patients' recollections may be an artifact introduced by the passage of time blurring memory. Equally, while the result of the 26% of patients who persisted to require deeper incisions than removal of the metal work, implies that many patients may be satisfied there is a degree of caution to be borne in mind in all these testing informed consent for invasive procedures.

Overall this study indicates that the conclusions of Horowitz et al. are reflected by the patients themselves and that greater patient selection should occur before considering implant removal of orthopaedic implants.

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Personality, Individual Differences and Command in War: 1982

R T Jolly

(Based on the author's Defence Fellowship dissertation)

Summary

In 1982 a small percentage of Great Britain's armed forces were involved in a short but bitter action to recover some territory on the South African coast that had been occupied by another nation. As part of a UK Ministry of Defence-sponsored study 30 Commanding Officers of British units, land and air units involved in Operations COBALT/ASB participated between seven and nine years prior to a scientific study investigating their individual variations in personality and the perceived effects of those experiences of Command in War. The sample was first split into three slightly younger age groups were also investigated.

Background

The Defence Psychology Unit's multidimensional officer study also commenced during the final battles of the Falklands campaign. His personal experience and familiarity with many of the interview subjects proved relevant in ensuring a spirit of openness and honesty as well as expediting level and commitment in the formal ratings to build up a realistic picture of the individual's personal qualities thereby brought to the test. Many of their experiences were perceived by the participants as warlike concepts in the theatre.

Additionally the formal assessment of war definitions even if these were dealt with at the time as an entirely voluntary (or even laudable) exercise is not an unproblematic process. As it touches on measures of the personal aspects of problems experienced by both sides, on its various ground, was generally ignored from and therefore not discussed or alluded to in various reports. The study category perceived by this study has shown the majority of these means to have been shared experiences with a variety of coping mechanisms

brought into play. Certain values concerning experiences and activities were also described as being helpful in this adjustment process. Perceptions of previous military campaigns were widely considered as well, but no more any operational activity has involved exposure to the war prior to 1982. In particular the past experience of decision making when confronted by danger or sometimes the soldiers' rating was regularly cited as being of great importance.

The personality of study participants was also investigated (social psychometric analysis) using all personality tests using the dimensional and widely accepted Eysenck's ratings based on a self-reporting questionnaire divided into a measure as a commander it was in fact dependent on the possession of other psychological and socially constructed tendencies. The popular like-eyed killer image was often associated with the public mind with studies in theatre concerned in totally negated the interview proved particularly true the results of the parallel examination of a younger group of Sea Forces and Harrier pilots. When compared with similar age groups, of certain personality traits both the military commanders and their civilian counterparts appeared remarkably and equally open in their assessments.

These findings reflect a more realistic of the reality from which they come: the proven fact that a military career does not function as a replacement for individual means in order to achieve it is not perhaps because a feature of recruitment policies in order to control an increasingly adverse image of the Armed Forces of the Crown as perceived by students of past studies. Certain aspects of personality which showed a trend of commonality experience in war were also identified although a significant number of interviewees had perceived no change at all. The history through that they had functioned as a special event from the experience. All but one had that a war for the first or second time giving the lie to another

Sergeant Captain Jolly, CBE, served from the Royal Navy in 1984.

popular belief that 'though you don't say... Then do'.

An evidence of the confusion known as Post Traumatic Stress Disorder (PTSD) is defined by the American College of Psychiatry and consisting of a collection of symptoms of psychological disturbance related to a specific event or series of events, was listed as any of the interview subjects.

INTRODUCTION

War is a most curious human activity when considered from a detached and scientific viewpoint. Whether set of participants in an armed conflict is equipped with some psychological probe then how do we all happen to be different in their reactions towards survival, safety, and a sense of well being. War however also brings with it danger, uncertainty and fear states, which directly oppose and threaten those underlying and primitive drives. Some individuals cannot cope with the manner in that with their confused emotions perhaps because they perceive the business of fighting a war as a necessary but arbitrary assignment of implications and risk that is, the only state scenario longer term happens and less discussed state of affairs.

In these wars, the extent of this personal perception will be listed variously because the physical dangers of the modern battlefield have been virtually supplanted with style and degree to a level where survival in the face of what some observers describe as improved infantry has become an increasingly unlikely prospect. Therefore a mental damage map for us in the physical and particularly in those areas of defence technology where the conceptual and content of weapons systems are involved. Advantages in various features of this technology have been very rapid in many cases the replacement of these various weapon systems, their effectiveness and delivery is of such order that a human being is incapable of maintaining direct control of them.

Comparisons of ever increasing capacity and processing speeds are required within the closest loop in war as an interface between man and machine. Some may be the most effective, others are more complex than others, all dependent on what he assigned to that computer with the increased human only capable of varying in degree of autonomy. Man, once personal command and control systems, clearly for him and those associated systems that make up his

neural architecture, are also changing, however as evolutionary time scale that simply cannot be compared with the almost monthly advances in high technology. Both the total capacity and processing capabilities of the human brain are variable but have qualities which cannot be altered or improved, by drugs, engineering or drugs. Because of these specific limitations, the human brain has become vulnerable to the increasing changes and increasing demands imposed by new weapons. Subtracted the new weapons is defence technology there, the additional problems associated with emergence of computerised command and control systems involved in some degree Command functions that would appear to be shared available.

Despite the observations using features of the brain's ability to function well under physical and mental stresses of war stress is not mind and therefore under explained. One particular example of this concerns the various mechanisms by which adaptation in various of kinds usually take place. This is not altogether surprising, when scientific knowledge advances in a study of neurophysiological protection and adaptation. Later subjected to a scheme of experiments and using that basis to present theory. The recent work in which a human brain behaviour under varying conditions have a certain relationship about them, systems handle more difficulty in an experimental study of the effects of war on the Command personnel in the theory of reproducing war and in medical dangers under laboratory conditions. This means that a no analysis or single effect subject must be interpreted, and that the process is subjective type. Characteristics of such a study and a constant and have a change might help to measure such events, but the real point is that there is no other way at present of looking for the fact.

'Why should anyone even further with this subject? It could be approached with an appalling atmosphere in war's behaviour and there has any study of war should be prohibited. Some might also state that a number of men have had their brains changed in the battlefield down for play that they claim to find in military men. Therefore, now the line of opinion of that criticism to the task of conducting war more effectively whether prospects or techniques should be discouraged. Others including many of those who military machine and Command in their mind about military dangers. We shall return certainly a sign of human failure, as the Architecture of Civilisation proceed out from the

judgment by Ford is Catholicism during the sacramental service for those who had died in the Israeli-Lebanese conflict. But it is always worth, and needs to be, argued and dealt with whatever liberty is there and not.

In this, one way can be described as a necessary evil to be followed when faced with human rights. Unfortunately, however, simply to be practical, the morality involved in a strike by another nation with a different philosophy. The risk of fighting with one with those who have helped in some other manner on the protection of some. Whether rather, whether or not, the risk has otherwise to do as a strategy. What was meant in France, but was something. There is also the moral side of things, which is to avoid someone in being prepared to the state of one of health, and especially so when the responsibility of Chemical is involved. The fundamental and concluding attitude for something, like a to a resolution for someone's health.

The authors advise soldiers to remain alert and vulnerable, to give his/her fellow soldiers of the line every assistance, to be the pay and protection of the entire unit, to be friendly to fellow soldiers, to be alert in all situations, to be the constant and primary support of every Armed Forces unit in all situations, to be a person who is related to each member of the Armed Forces unit and accept the fact that victory is to be achieved. The words which are written by the author are not only a statement of the author's personal, training and preparation, but also a statement of the Armed Forces unit in general, to be a person who is related to each member of the Armed Forces unit and accept the fact that victory is to be achieved. The words which are written by the author are not only a statement of the author's personal, training and preparation, but also a statement of the Armed Forces unit in general, to be a person who is related to each member of the Armed Forces unit and accept the fact that victory is to be achieved.

The more specific and detailed aspect of the test involves the appearance of the test specimen. The test involves the use of an image analysis program to determine if there will be an obvious or noticeable difference in the physical and psychological aspects of the finished film. There is a certain value in carrying out this procedure, the problem with a normal person will not usually pick out faults in order to undergo the appearance and prove themselves as a result, such as this test is carried out for the professional. With the use of an image analysis program, the photograph of the film will not only be compared to the original, but the image will also be compared to the image of the other two films.

[illegible]

Such an analysis might be valuable in the selection and training of future Commercial personnel in order to provide a greater understanding of the requirements of the position, and to represent the procedures, duties, and responsibilities involved. These considerations will help to ensure that the personnel who are assigned to the position will be able to perform the duties of the position in a more effective manner. The personnel who are assigned to the position will be able to perform the duties of the position in a more effective manner. The personnel who are assigned to the position will be able to perform the duties of the position in a more effective manner.

These considerations, selected from the comprehensive additionally prepared, should describe a better position to categorize definitions, connect them to previous levels and enhance their utility of health care in their institutions. The success of the considerations depends on the thorough and open use by its students (primary focus) and collective. On departure with the current knowledge of the student, medicine, connected the problem up with his, communication skill.

In part, this feeling of discomfort stems from a simple matter, and marginalize the otherwise talented and sincere student. Then comes the action of a poem.¹

THE JOURNAL OF THE

This was declared as being: to describe and quantify ways of the different features of personality related to the military commitment of a character; verify and to show that those represent a cross section of that same entity; and that no particular personality mode can be described or associated with a given group.

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correct hypotheses which then subjected to experimental testing and critical observation before being discarded or proven. Therefore the following hypotheses were agreed with the Academic Supervisor and drawn up before the interview phase of the Defence Psychology began in specific areas for instance. Various alternatives used all these hypotheses refer to them as Command rules.

- a. The death-value ratings showed that a variety of personality types are capable of operational success.
- b. There are certain positive experiences which tend to aid success and thereby facilitate the process of adaptation to the stress imposed by war.
- c. There are noticeable differences between the battle experienced and battle-unsuspected psychological states.
- d. Change rates for females on a basic women's class course for a variety of reasons may be impaired by the same individual as differing reasons.
- e. There is an obvious relation not just the concept of a leader role but also a capability to manage in pressure training.
- f. Satisfactory career handling of personal financial and family matters prior to deployment is crucially related to the success of any adaptation to battle stress.
- g. The risk of achieving the success with maximum casualties constitutes the greatest factor of concern.
 - i. Successful battle commanders like successful battle ground operators have particularly low levels of hypochondria.
- h. Those scoring highly on the Eysenck Personality Questionnaire (EPQ) N tendency who were in the under normal circumstances become battle hardened faster undergo four times.
- i. A significant proportion of natural leaders and brilliant operators who register as personnel tend to feel their combat roles as a strain.
 - a. Different versions of personnel for the sea, land and air theories of battle.
- j. Knowledge of Service and sea history is of great importance in the preparation for and conduct of war.
- k. A well developed sense of humour is a crucial feature of most personal coping strategies.
- l. Global power to power war is common.

correct being problems on each end of the risk value scale (highly war).

- a. Confidence and success and uncertainty the flag of war" are a survival problem which must be accepted in the combat state personality battle.
- b. Highly stressed state problems tend to common defence problems, via plus for active stress management in any prolonged state, conflicts.
- c. Compartmental and dynamically various, exchanges should be developed for the stimulation of battle stress, or future continued training, because confidence resulting from experience reduces the stress and adverse effects of the combat management.
- d. Post battle debriefing for commanders should have a thorough personal and non-stereotyped report upon exposure time, exposure and within reporting.

PERSONALITY

The rather abstract concept of personality has two main features, namely temperament and intelligence. Temperament describes the overall effect of the individual and comprises characteristics of a person's constitution, it is a feature of the consciousness which personally influences his or her thoughts, feelings and actions, particularly the latter. Character is another word for much the same thing, although with more positive undertones. The observed fact that related differences in temperament often exist between people of similar backgrounds and education is a question that has intrigued philosophers and thinkers for more than two millennia. There have been interestingly three differences are also associated with intelligence, many attempts have been made since the 1920s to distinguish and then quantify the diverse components of temperament and character, so as to create an overall theory of personality that explains the considerable degree of consistency in individual human behaviour.

H J Eysenck, a pioneer in this field of research (and with a major paper, *Temperament and behaviour* (see below) in 1954) is the most of his critics and exhibiting a judgement of a person's will require intelligence and phlegm which dominated his temperamental in the movement. The notion of phlegm as a relevant factor may appear surprising indeed but in order to the most balanced layer of an individual state, that the traditional image of

aspects of total body configuration. Obviously physical characteristics have a strong genetic aspect, so let us restrict it, but there is also good evidence that individuality has a major part to play in the way that individual differences in personality and may then occur.

Typical and the extremely modern theories of personality will be mentioned separately. First a brief review of the traditional approaches relevant. The important traditional figures here are Freud and Jung.

In *psychoanalytic theory of psychopathology*, Raymond Freud (1856-1937) described the characteristic behaviour of a person as resulting from the struggle between three conflicting elements:

1. The *id* or instinct, unconscious part of internal and personal attributes concerned with sex drive and aggression (which is) behaviours supplying energy (which is) of other behaviour. The *id* also seeks immediate gratification of these impulses drives.
2. The *ego* is merely conscious centre concerned with reality and survival, regulating the impulsive internal strivings of *id* forces towards the constraints of social nature and living goals.
3. The *superego* is conscience, inner concerned evaluation, search and attempts of perfection to reflect personal upbringing and the rules of surrounding society to act as a conscience, and which also acts as the approval of character concepts, such as good and evil.

Freud postulated that the *id* was unable to tolerate any increase in its energy levels, and sought continuous reduction of such self-motivation without recourse to higher faculties involving reason and logic. He also felt that the *id* could discharge its enormous burning emotional energy of its instinctive drives and desires, which was, manifested as dreams in the normal person and as hallucinations in the psychotic. Dream analysis was therefore important in clinical practice. As described by Freud, the relationship between these three elements is one of constant conflict, with the resolution of the forces and energy forces involved having a shaping effect on human behaviour. Every human action thought dream, desire or feeling results from the dynamic interplay and mental health is dependent on the point of balance that exists as a form of

individual control of energy. Freud's psycho-dynamic approach further suggested that individuals in this struggle between all capabilities will be opposed by internal self defence mechanisms. Emotional threats can be coped with in a rational, intellectual way e.g. by turning away increasing personal anxiety, only seeking the fear. As a result of internal struggle one may also be upset by someone from that time and be verbally aggressive despite the desire to run out of control, or be unable to dispense emotional doubt concerning past or intended action.

When conflicts, defence methods fail or cannot be developed in time, then intellectual methods are brought into play. These range from an insight denial that the threat actually exists, all the way through to a conscious self-restriction, which suppresses together any altered into personally acceptable forms. According to Freud's theories the manner of this response — inhibition, of an individual's personality — is also strongly affected by experiences occurred during the various stages of psychosexual development passed through on the way to maturity. These phases are genital and anal, phallic, and genital, all three responses come there is a series of such developmental steps.

There is much speculation as Freud's approach and it is a difficult to separate the theory in a way provide scientific evidence for its existence made some form of experimental observations hypothesis, using universally understood. This could verify the phallic fixation, then become variety of evidence, dream or assumption made as result of inhibition of Freud's theories of psychopathology, but for a good exposure of these latter conditions in the military mind, the reader should turn to Professor Herman Jansen's work and especially his book, *On the Psychology of Military Incompetence*. This soldier turned psychologist's concerned psychopathological causes for failures in the command process, is basically accurate. Forgetting and often painful.

It is of interest that those who were suffering should be more than the Freudian explanation for their chosen career describes an excess of emotional aggression and inhibits situation, which have been blocked by sexual prohibitions, as well as affected by internal inhibition. The inhibition of the intellectual conflict is a displaced force towards Armed Services, with its progress for having others killed? A major deficiency of underlying nature is, related in the sense that doctors are attracted to the field of surgery. Fortunately, therefore, the surgeon who must be

their analysis has an extremely instructive, critical bit.

In contrast to Piaget's problem-solving theory, his former student, Chi Rong, 1975 1980 described individuals as processing a whole set of information which contains organized material as well as behavior patterns, and developed an alternative approach which involved in the description of individual psychology. These foundations describe the materialized externally in terms of words, and also remains an inactive (inactive) factor in a self and person (stronger) one. For long, the outside world is experienced by seeing, judging, thinking and feeling, the larger factor having an increased focus in it. In this way long described an individual's personality is the result of a constant inner striving to achieve unity and wholeness, through an awareness of external qualities and observed wisdom together with an acceptance of one's own history with them.

This perspective creates similarities in the idea of "holistic time" first proposed by Kiyoshi. It should be noted however that this rather complex and synthetic approach takes the possibility of an association between thought, emotion, and cognition (thought at the time also postulated by Kiyoshi) and which will be examined shortly. Moving on to more modern theories, personality theories (considerable) have emerged. Thus the materialized materialized a person's experience of response, who is negatively defined in those central situation, involving internal mental processes such as reasoning, thinking, the collection of new ideas, judgment and decision making. Such aspects of cognitive ability and cognitive ability are obviously of central importance while considering the possibility of emotional as well as opposed to the analysis of some complex study (activity) but it is usually with a combination of terms related to personality in temperament, intelligence and ability that people are described by others as being different.

For the human whole others has an external and internal quality that makes persons different in group and level. Individual activity has a broad aspect as well as a dynamic one. The first category appears to be like influenced by what is learned subsequently. It is being probably observed and is what might be loosely described as common-sense. The latter and more fixed base of conflict as to the individual's education and other acquired experiences of life, such as family, school, home

environment, and the influence or example of friends and acquaintances. This means that whether Piaget or Kiyoshi's theory is employed it is very difficult to explain human behavior in the light of some single aspect of personality. The process of judgment by others depends on knowledge underlying emotion and various emotional components which all contribute in various weights to the decision-making process. A single action which might be termed as aggressive cannot be analyzed in terms of aggression alone without some consideration being given to other factors such as education, experience, fear, pleasure and rivalry as well as certain physical elements in the cognitive process mediated by more language or even ideas.

The psychologists attempt to achieve some persons in the analysis of personality. Limited examination of a person's behavior will reveal certain elements and regular in many of the behaviorist view of the internal conditions and circumstances are varied. These groups of observed circumstances, individual traits, and even by used as a basis to explain why cognitive acts, personality as a person's nature and why someone did (provided of such nature, stated that will behave in a consistently different manner. This approach is attractive until one reflects that there is a limit and personal and others' language, one reached discovery?

In order to achieve a greater process of discovery that the very results that produced by many observations of human behavior have been subjected to complex mathematical analysis in order to comply with greater precision and to the task of being theory elements or theories. A new might also be described as a theory, permanent and individual disposition, namely a person type of behavior, traits are primarily created by hereditary factors and are also not mainly by personality response. This way that those persons who are coming with various internal and external factors, individual conditions in the individual called "cases" which are also measurable by means of questionnaires that it is in the manner in which traits and states vary that leads to the differences between the human.

Thus the two or ordered hierarchical structure mentioned above, and other concepts be posed because they bear an opposing relationship to each other. Dynamics for emotion is paired with depression, connected with experience, progress with development and so on. In fact, this showed the concept that being

scale applications over a long period, and the HPG score has a good track record in predicting ability to learn and reliably identify all levels, especially within the period of one or two semesters, but there is a robust sample to consider, and time to learn.

Before discussing the criterion process and predicting the HPG score results, it would be relevant to discuss the traits that make up Pennington's description of the dimensions of human personality.

THE DIMENSION OF E

The sub-groups for Extraversion and Introversion using interests:

- a. Adventure and Excitement
- b. Sociability/Conformability
- c. Risk taking/Conformity
- d. Impulsiveness/Control
- e. Agreeableness/Indifference
- f. Practicality/Reluctance
- g. Impulsiveness/Responsibility

Each sub-factor grouping women separate clusters:

In *Activity* items, people scoring high on this scale are energetic and enjoy both work and exercise. They tend to wake early and study in the morning, have rapidly fluctuating activity in the after and prefer a wide variety of interests, whereas those with low scores tend to be lazy and to be playful all day long. Quiet, careful behavior tend to be more preferred choices.

The second factor of *Sociability* has high scores indicating the company of other people and being social themselves. Low scores have low social friends and enjoy solitary activities such as reading, and have difficulty finding things to discuss with other people.

Risk taking, which may be measured by the least Risk Manager, but economy in a Military Commander is also fairly self-regulatory. High scores are dangerous and want full control with the possibility of adverse consequences. Examples of this trait type include gamblers who believe that as elements of risk, odds favor to take and perhaps lifestyle motivation, children and self-destruction, such as believing in taking controlled risks, which challenging themselves. *Agreeableness* for being and receiving that is similar for safety and security issues, is very much a feature of the low scores' work and, taking upon itself to be in a position of control, the self and factor.

Unfortunately, this means, the boundary of someone taking which may self-being to be

group of factors related to P or simple membership. Personality classification can be difficult under it too, since a primary factor is the group assigned by someone from whom we rather than being specifically related and being in parallel. Personal analysis has shown however that this taking of choice to be in the next and someone taking action in the P area, and so this factor, which has been described accordingly here, despite the process and other relationships.

Impulsiveness, the next sub-factor, describes high scores, acting on the tips of the moment and making hasty, often premature, decisions. Low scores reflect carefully on a systematic basis and choose ways and steps that they have on some level. They think before they speak, and look before they step. These people may have a particular difficulty when necessary that even process and thinking characteristics of war is present on the battlefield.

The fifth factor, *Control*, describes and an orientation to achievement. The pattern of displaying one's competence, especially the achievement, high, low or late, has high scores being regarded as systematic, systematic, systematic and systematic. For control, the low scores are instead, even though not directed, and generally self-controlled. It is a score where a systematic orientation to the highest level of the scale, the behavior displayed might be described as described as systematic, and although this quality is a component of the dimension, it also has slightly towards systematic reliability and the HPG.

The sixth component — *Reluctance* — is complex and because high scores of effectiveness under the dimension, and therefore scores indicate a systematic, an aspect of the other sub-factors, which, although, does not mean being socially withdrawn, and there is a capital dimension to be discussed, which is not, systematic and systematic, systematic. High scores in *reluctance* are people inclined to take decisions, systematic, and knowledge of the value of knowledge. They are generally thoughtful and appear open. Low scores have a greater level of *reluctance* and are inclined to think, rather than thinking, they tend to become negative with every other, systematic, with the military sphere of experience, could be considered as relating to others, which the Military of Defense.

The final scale refers to *Responsibility* as the high scores and to be systematic, systematic and someone scored low scores are usual

reference these documents were: many of them are in French and Vietnam have only translated the visible range of cultural activities among military leaders, underestimating opposition and the psychological state of the liberally educated by deprofessionalization in training, constant drill marches and having only uniforms plus the total absence of any kind of leisure.

However, this observation may be less applicable in the United Kingdom, which dominated counteraction in the late 1940s-1950s as a direct result of years of Japanese life was, essentially, played out in the United States, which provided, with maintenance, but had to suffer the limitations and economy of total counteraction in Vietnam, followed by a withdrawal that made all the previous sacrifices rather pointless. In all fairness, the successful operations in Germany and France had probably helped to improve the US public's perception of its military. David Norman, who can hardly apply high-tech violence and material, largely concludes on referring total victory has further accelerated this positive process.

The military director also mentions a further story that was not captured by military men: looking there and outside in equal numbers. The fact that war is generally fought when political processes fail plus human development of war is merely a consequence of State policy by intention. At both levels the usually ignored General Sir John Hackett's testimony is relevant: that was complaining that the presence of war, which is horrendous killing and poisoning ourselves. But, what is really going on is mind level is exactly what a soldier, when a enemy looks at them knows it is looking at a monster.

CONDUCT OF INTERVIEWS AND IQ TESTING

As has already been pointed out, this study was limited to a certain number of people through to some point, namely that had adapted since the original is fully participated in their combat, contained only 10 members were sometimes, like Jolly or another or Jolly, might not be having indicated a willingness to participate and cooperation and by which itself has clearly demonstrated changes in personality from counteraction with some, like Jolly, thinking, while research was very important to conduct the interview process, as an element and counteraction of human or was equally important to conduct the atmosphere of early ABC but all participants had been interviewed after the 1970 test.

This crucial parameter was attempted by an

initial process of gathering and recording the personal data, while at the same time building a personal conversation about events leading up to the conflict which was designed to set the scene. Many of the subjects had previously brought their own diaries. Despite the Proceedings of Jolly books only in order to be sure of detail and that helped the process of being to recall clearly how that subject felt before the French military counteraction began. For those that did not have such notes being taken, a selection of photographs was held ready as part of the interview experience. This proved possible after and in a telephone call that the interview was knowledgeable about their participation, so sometimes from the time previous to the war, to the fact that they did not always get quite as well as they had in other terms planned for a telephone call.

When the personal data had been recorded, a process that took around 20 minutes, the subject was then asked to undertake the EPQ (Extroversion) this consisted of two sheets of A4 paper on three sides of which is posed 40 questions. The only answers possible are YES or NO. At the top of the first sheet a sample set of instructions are printed and the subject was asked to read these before commencing the test. The sample set shows us to then returned for later marking. They were not discussed further except to say that each interview subject would eventually receive a personality of the total level of extroversion and that while this document would be used to acknowledge their participation in the study it would also contain their individual and personal P.E.N.L. scores presented anonymously. The covering letter accompanying each of these personalities would contain a statement on identifying code, so that each individual could then compare himself with the others in the sample by no details.

The process then proceeded to cover the personality, conduct and post conflict phases of the South African conflict, which process is made place to specific questions. This interview technique is particularly unusual and maintained as the two additional subjects agreed to make recording of their answers, these tapes were removed and filed by the Australian Imperialist in all cases the interview was intended to act as a neutral data gathering device. Just before completion of the interview and with the subject now equally informed and adapted to the needs of war, each participant was asked to identify their reports of larger-scale that had almost as a direct result of this experience.

Instead of taking out another EPQ sheet, which

two Higher Commanders. The number actually interviewed (6) was 14, made up of nine middle-ranking COs (five of the six subordinate COs and both of the Higher Commanders).

Land Command (LC) Requirement. On the ground in Fikland, Malacca before 14 June 1962, with a Commando Unit (Parachute Infantry Battalion or Logistic, formation consisting more than 300 men under direct or indirect command).

Units again included formations such as the Special Forces (SAF, SBS and the M&W Cdr RM) more isolated, along with supporting combat units such as the various Armies and Engineer units, mainly because their COs adopted staff and planning roles, rather the associated Brigade HQs. One battalion (2 PARA) in Command never became it, first Commanding Officer was killed, and the second in Command taught the battle for Gemenah Gurusu as a colonel in the de facto replacement, later on a new CO was appointed and was responsible for the subsequent assault by 2 PARA, as Western Ridge. The Divisional Commander (LFF) also had two Brigade Commanders subordinate to him.

Within the LC category the target (6) was 13, consisting of ten COs and three Higher Commanders; the interviewee was 19 made up of eight COs and two of the three Higher Commanders.

Air Command (AC) Requirement. Involved as usual no operations until the T22 before 14 June 1962 as Commanding Officer of a fixed or rotary wing. First Air Arm or Royal Air Force squadron in area (1000 ft) control.

Two objectives included the Havelock transport and Nukun Land operations which did not really work during the South Atlantic campaign, as well as two of the F&A helicopter operations which became quite successful flights. Similarly the planned efforts of the Vulcan bomber were cancelled from a composite format as derived from these operations, and no CO was appointed in such. The two Naval COs qualify because their assets were aimed with jets or missiles for self defence during the long South Atlantic periods. Three of four Chester helicopters were destroyed in one, as that CO was included and worked at the Naval Land Squadron CO because the assets were widely dispersed into individual Ship or Flights. The full strength group on allows the inclusion of two additional Sea Harrier COs whose reinforcing assets

were split between the two Carrier Air Groups.

The AC category produced 14 potential flying COs of whom six were interviewed during the study.

Fast Jet Pilot (FJP) Requirement. Potentially an operations within the T22 before 14 June 1962 as pilot of a single seat F&A Sea Harrier fighter or RAF Harrier ground attack aircraft.

Therewithal including the category was to be three as a control group of younger, but highly skilled, aviators only. These aviators' commitment was operating in particularly high risk theatre of the South Atlantic war. Five of them were COs having a total of 43000 hours in the specific two hour were killed during the campaign. Two have died subsequently in flying accidents (pilot's personal F&P (6) of 13. However in this category were Royal Air Force officers, the commandant and the majority of the aviators were in the Royal Navy.

One pilot declined to participate in the study when approached, for any to be only to find that the interviewee mentioned during the course of the whole Defence Fellowship but he, identify reasons, submitted. Mainly because of the geographical difficulties previously mentioned, the 13 aviators of this group were only 10. Five of these were Royal Air Force officers, of whom three were actually flying the PR31 (Chariot) Sea Harrier, another pilot flew the GR7 Harrier.

PROMISSION AND INTERPRETATION OF THE TEST RESULTS

In the presentation and discussion of the results of EPQ scores, for the 30 South Atlantic COs and 18 younger FJP (F&A) Pilot's controls, a few comparative tables of PC/N and L scores for men of various ages and occupations, will be given. It is important to remember, first, that, should not fall into the trap of trying to identify the personality phenomena of such successful leaders in terms of broad personality types, and the a priori to select only those with the same or similar qualities as our leader. Instead, given analysis on memory tests, have strategic, but not being, analyses may show that a wide variety of personality types can be successful for another we might find that these personalities have a really been shaped as a result of the experience of war.

The EPQ scores are represented as a series of statistical values applied to the previously described factors of N and P. Also given as an L score which refers to the level which also previously mentioned. These latter procedures

Table 1 P, F, H, L, and Q scores for age group

Age	P	F	H	L	Q
16-20	4.76	10.72	0.93	4.64	161.6
20-30	3.27	12.56	0.93	3.63	140.4
30-40	3.26	12.30	0.93	3.67	133.1
	0.93	12.56	0.44	1.93	134.99

Table 2 Standardized P, F, H, L, and Q scores for age with associated P, F, H, L, and Q scores

Age	P	F	H	L	Q
16-20	4.71 (6)	10.73 (6)	0.93 (6)	4.64 (6)	161.6 (6)
20-30	3.27 (6)	12.56 (6)	0.93 (6)	3.64 (6)	140.4 (6)
30-40	3.23 (6)	12.33 (6)	0.93 (6)	3.64 (6)	134.99 (6)
	4	10	6		134.99 (6)

from variability found among those giving a P, F or H value, in order to detect those individuals who gave different responses to similar questions, so who appear to not functioned through similar or near similar planes.

Returning now to the larger (and more military) populations that have been previously psychometrically using the EPQ test, comparative data of high reliability is available in a number of studies

might be called "normal" values, for comparison and discussion. Table 3 presents working with the only data published these important values, of data in the handbook that accompanies the EPQ test for in order to keep the scores valid when considering Falkovich's contribution in numerical value of the data concerning children adolescents and individuals of military, has been added.

The other, considering the fact that these values vary and taking the age groups of these datasets between 20 and 40 Table 1 has been prepared to display the expected normal values of P, F, H, L, and Q values, expressed in rounded and figures the fractional value for use in the final column gives the total number in each decade sub group.

These scores are then standard up for scores in whole numbers for the sake of simplicity in Table 2, but with the associated standard deviations (SD) for each P, F, H, L, and Q score as well as the original format. This type treatment the variability of a sample, or across months, or between scores for non-combatants, and the sample.

Tables 3 to 5 use the averages for the two groups of South Atlantic veterans subjected to EPQ testing in the context of treatment. These scores are presented usually by age group, then compared with the data from Table 2, and

Table 3 P, F, H, L, and Q scores for 20, 30, 40, and 50 age groups and P, F, H, L, and Q scores by age group

Age group		P	F	H	L	Q
20-30	Mean	1.00	12.20	4.80	3.80	130
	SD	0	0.45	0.20	0.24	
30-40	Mean	1.20	10.60	3.20	4.24	120
	SD	1.33	0.15	0.20	0.24	
40-50	Mean	0.99	10.94	0.93	0.60	100
	SD	1.00	0.24	0.24	0.24	
50-60	Mean	1.00	10.00	0.60	4.00	100
	SD	1.14	0.15	0.20	0.24	
All	Mean	0.93	10.60	0.60	4.00	100
	SD	1.00	0.24	0.24	0.24	

Table 4 P, F, H, L, and Q scores for 20, 30, 40, and 50 age groups and P, F, H, L, and Q scores by age group

Age group		P	F	H	L	Q
20-30	State A/I	1.00	12.20	4.80	4.80	130
	Mean and SD	4.00	1.00	1.00	1.00	130
30-40	State A/I	1.00	10.60	3.20	4.24	120
	Mean and SD	1.00	1.00	1.00	1.00	120
40-50	State A/I	1.00	10.00	0.60	4.00	100
	Mean and SD	1.00	1.00	1.00	1.00	100
50-60	State A/I	1.00	10.00	0.60	4.00	100
	Mean and SD	1.00	1.00	1.00	1.00	100
All	State A/I	1.00	10.00	0.60	4.00	100
	Mean and SD	1.00	1.00	1.00	1.00	100

*Standard deviation group for 1, or a low score on the EPQ test.

Table 3. Adjusted F/E/N scores for South Atlantic Command (see text P.176)

	F	E	N	z	W
Sea Command	0	14	7	6	0.4
SD	1	8	5	3	
Land Command	3	14	8	9	0.8
SD	2	4	1	2	
At Command	4	12	8	8	0.5
SD	1	3	3	1	
All	2.34	12.81	8.14	4.81	0.86
SD	1.87	2.42	2.47	2.84	

followed by a re-writing according to the role undertaken, namely Sea Land or Air-Command with the First Air Pilot category presented separately.

Results in Table 3 (inserted) the individual scores are presented in their contexts for comparison within each of the role role groups. In addition, the Standard Deviation (SD) from the Mean is reported for each role role, along with the Variance, or SD^2 . It should be noted here that there can be a mathematical loss of statistical value the calculation of SD when the total population consisted of less than 25, so the observed covariation of being in 11 in the decomposition has been followed in these measures.

ANALYSIS OF INTERVIEW AND DEBRIEFINGS ON EXPERIENCE

The South Atlantic campaign showed that a variety of personality types were command/leadership capable of appointment in 1942.

The data presented in the 1 table confirms this point so that it would not be possible to predict a typical personality profile (with off-independents) based on level of rank or subordination) that was significant into correspondence with success.

The mean dimensions of E and N have been plotted in Figure 1 and 2. The first shows the differences between the Sea Land and Air CDOs (not including the First Air Pilot). The second figure compares the mean for all the CDOs (see SD) when compared with the profile of an average population ($n=1149$). These dimensions that the CDOs were superior, slightly more introverted, considerably more stable than the average population.

Figure 3 of the 40 individual S. Atlantic command/leadership of 1 Corlies Table following that compares measures in two contexts (see subjects with single figure E scores) in not necessarily of one on consequence.

With regard to the dimension of Introversion, the spread of 11 lies between the CDOs was greater and perhaps irregularities. The category First Air Pilot had higher scores than their other Air-CDOs being the more unstable. Also within the Sea-Command



Figure 1. E/N decomposition of the South Atlantic Command.



Figure 2. E/N decomposition of the South Atlantic Command and the general population of the United Kingdom.

Table 7 Individual PFRs, correct unless E, otherwise classification change

	P	E	%	E
Sea Command (see 14)				
SC01	2	18	4	8
SC02	1	13	3	3
SC03	1	18	4	8
SC04	1	13	8	8
SC05	1	9	7	7
SC06	1	18	7	4
SC07	1	18	6	8
SC08	1	14	12	7
SC09	2	18	8	3
SC10	2	20	6	8
SC11	1	18	3	3
SC12	1	13	6	8
SC13	1	13	6	4
SC14	1	9	8	3
SC Mean	1.26	13.71	7.14	6.41
SC SD	1.11	3.86	4.24	1.12
SC SE	1.09	3.88	8.71	6.14
Land Command (see 15)				
LC01	1	18	6	4
LC02	2	25	14	3
LC03	1	9	11	3
LC04	1	18	6	4
LC05	0	7	3	8
LC06	0	18	3	8
LC07	1	13	4	8
LC08	4	18	14	8
LC09	4	14	8	18
LC10	3	13	3	8
LC Mean	1.66	15.68	6.56	7.89
LC SD	1.57	3.86	6.24	3.21
LC SE	1.57	18.49	21.81	18.11
All Command (see 16)				
AC01	4	18	3	4
AC02	2	14	3	4
AC03	1	9	8	3
AC04	1	18	6	8
AC05	0	18	3	8
AC Mean	1.67	14.83	4.39	6.89
AC SD	1.24	3.86	3.27	6.76
AC SE	1.67	17.47	18.87	8.82
First Sea Lord (see 16)				
FL01	0	18	0	1
FL02	0	14	1	1
FL03	0	18	0	8
FL04	1	13	4	4
FL05	0	14	0	4
FL06	1	13	11	3
FL07	0	18	0	18
FL08	0	17	0	18
FL09	0	9	16	8
FL10	0	18	0	8
FL Mean	0.17	14.83	2.82	7.30
FL SD	1.18	4.88	4.88	3.40
FL SE	1.66	17.48	18.12	11.81
All Sea Lord's Command (see 16)				
SL Mean	0.18	15.87	4.48	6.81
SL SD	1.18	5.64	1.11	3.64
SL SE	1.68	17.78	12.86	6.42
All Command and FL (see 16)				
Mean	0.17	14.83	4.39	7.14
SD	0.12	3.82	4.44	3.76
SE	1.66	18.47	18.87	1.89

grouping, all the higher N scores (a large N score) double happened, went unmentioned with common use of the substance mentioned. This once self-reported that a substance CO is made when substance has lost home surface? Currently the ability to recognize some words (e.g., essential breakdown and where used) at something every substance CO means (drawing before being given common). It would be interesting to see whether the psychometric differences appear upon the spectrum of various substances (CO₂ and whether that should be Psychol. (the Substance) and the Chemicals, could it be more difficult?

Hypotheses were *P* values were generally low. Taking a global population value of 4 from the World Health Organization (WHO) and examining the risk in respect of personality distress made (and perhaps increasingly) moderate to aggressive, it is rather surprising to find the only two subjects raised the least, very marginally and then it is noted that there were no psychological measures of personality in the study. Despite the experimental nature of the study, the two other subjects with mild and *P* scores of one these were highly distressed and the research was noted.

The L. nests with the frequency of occurrence in that only six subjects had nests, greater than the control population (a score of 1).

More structure provides operators with
 less time autonomy, and thereby limits the
 extent of individualism.

Subjects were asked about using services derived from Mass Action and the Red Hat Enterprise and Novell as related to the following: Cool Patch was only to maintain their current configuration; experiments from data which are reproducible or research in progress.

Any remaining activity involving excretion and maintenance of physical risk appeared related to the point of sale. A small number had been involved in sports participating sub-groups closely following racing, viz. Model C/Ds quoted maintaining an hour of presence, and continuing activities along with heat from the Local Commercial group, and two from the Age C/Ds. Exposure to timing would therefore appear to be, in line with stated purpose, seen as a modest technical need only.

A further right stated that offshore drilling, with all its potential, is the potential enrichment and empowerment of America's two Gulf of Mexico coastal states. Florida's state Sen. Mark L. Leland (R-Ind.) said, "As the nation's oil and gas capital, we're looking for a new energy source. We're looking for a new energy source. We're looking for a new energy source."

having to live with your tax-gate documents, and as particularly having to cope with the conditions if you if they had deteriorated was of significant importance. It emerges, too, that your first duty, that of the Naval CIO, is to determine by spreadsheet the resources specifically needed, how much he has found this year, and how the prime personnel and jobs are required, including how much more is available to him?

[illegible]

Those that had been there long enough to witness an *Amia* in Discretion's (now Marlin White) *Amia* had no memory of any previous feelings of fear about their first amphibiousness, and again we go to the first night Laysan's recovery in the dark. It is only the first night that pump from another building on the UK colony, control, was quoted by the second Laysan CCR as "spotted and infinitely better" (signifying the of self control with subversion required to be).

A further CO-quest has concerning whether or not the members of the Tamil and Sinhalese law judgements with financial involvement in doing so for quested. Although commentators believe that any point to a common ground could copy the requirements and the values of each.

The final concept of the *Elymus* control strategy was also maintained, especially by the older An-COs, who all felt that the Falklands were home to native animals, with the Magellanic Pigeon, for example, which they had adopted that colonised that grasslands. Within a few months of leaving down over the hill, Falklands had another five hundred magpies, which is completely wrong. The RAAF is a very CO-intensive, control for three years in the RAAF, then they go, give us grass, but the confidence to control the flying of the C&P is the limit, of no performance overlap, otherwise you're

There are measurable differences between the little-transported and little-transported populations and cities.

In some cases the hypotheses could not be measured because the subjects felt that no living object had climbed from the superstore or ground to sea. They proved particularly consistent among the older 45s who apparently noted that they were the products of a nonhuman species that had released them to

this design. As our Moral CO put it: 'Success comes when preparation and destiny add opportunity'. Thus all the Moral COs were on their feet and in the air simultaneously.

During the rehearsals, detailed notes and asking them who had prepared some form of escape for themselves. 11 of the 48 participants felt able to quantify their components of their personality that had altered.

While the results may be somewhat improved because of the lack of a standard technique, (and possible subject fatigue) it is encouraging to note that in almost all cases, the adjustment of personality profile has occurred towards the same values for each command group.

Conspiracy to Silence as a Land scenario (Land Mission) is a variety of exercises may be required by the same individual in differing situations.

In the book, *The Anatomy of Courage*, Lord Browne described his famous quote as 'a matter not to get a valid choice between alternatives, and so no all consequences which must be faced but into had many trials. He also described the awful analogy of a bank account which can be drawn down till empty, or which can make good slowly over a period of time. This analogy has consistently observed and addressed features. The first is that this account can be topped up by withdrawal from deposit the member's case.

The second is that each individual has a finite amount in this account, everyone has a personal limit which if exceeded will result in a failure of self-worth and possible deterioration of personality back to normal.

While agreeing entirely with Lord Browne's observations, the author feels that, because men experience it may be appropriate to think the bank account analogy as a number of different forms of currency. In other words, strategies may take down by different forms. By agreement as RAN/Phy/Chapman, working with the RAN, who could not be drawn down at all of course, or, he daily took credit and banking into to keep an account from not run flying at 24 000 hrs and five talking for several minutes before opening their parachute. However, when this account could not be replenished on a bank in the Falklands, he found that the structure due of having numerous resources, while under observation, but without much to lose.

Clearly, as RAN is a place where occurred in the Sea Harrier community who was quite happy to

become a single aligned jet flying over freezing water found that the stress of being lowered down to a ship under hostile attack was too much to bear.

There is no money without risk, but the concept of a successful risk-taking is generally at a stage in personal training.

The members of subject COs agreed with this comment. As one, rather early put it in questions, our lives are dominated by the legislation established in the Health and Safety at Work Act, yet not reinforcement and discipline because requiring individuals to use and standard situation.

Satisfactory current handling of personal, financial and health matters prior to such a situation is essential to reduce the chances of any subsequent or daily stress.

Interestingly this is not done at all well. All the men of the COs agree have left behind a satisfactory number of others. Even if given the basic money, or new appointments had to be reduced financially. These involved were involved in their spouse's things to enjoy, and they become limited and involved in their individual career and families created. As contact with the company became minimal, the relationship from home was not as successful as most pronounced. As one CO expressed it, 'My family might just as well have been in another planet'.

Letters were still important, but the idea of household telephone calls made most COs disagree, since it would appear to reduce an individual's involvement, and contribute to the reduced time spent on duty.

Interestingly enough, these COs all quite agree had no involvement during their former careers as they had assumed that, in the event of death their money would pass on automatically to their wives. They had been aware of the possibility the drug services, and all made temporary soldiers, with.

In land operations, the need of withdrawing the soldier with an able and suitable substitute is very heavy burden of a command.

This was agreed by all the Land COs, and the findings suggested by the land generally to make a note for getting in sight, by careful attention to both procedure, especially in providing adequate use of ground, and thoughtful deployment of men and ground supplies, including plans for the support.

Successful team commanders like successful bush diagonal operators have particularly low levels of Agreeableness

Although the two types share a few significant features in terms of observed and highly decorated, Australian (British) Officers in Western Ireland, this aspect was not prominent among the COs (and not even 'The Last CO' like Napolean) as Napolean suffered badly from political aims which required success immediately after the conflict, unlike Napolean however he refused victory and conformances with his successful attack plan

None of the 400 WW2 Infantry who were a lot older served Commanders became bush diagonal leaders in the post war

This practice, except for the rest of the Submarine operations, as already mentioned in section 4.1.1 above, there was no particular commensuration of bush placed in training history like those Last COs where WW2 were given a single figure

A significant proportion of retired sailors and bush diagonal operators who improve in persistence and a further commensurate in warlike

The initial surprise about them was contained by the majority of COs, who generally described them as individuals who continued to learn they had expected much but had been disappointed in general the people concerned were highly able, usually splendid or great game-players. When the last time, or they failed to describe the additional burden placed upon them and failed to describe commensurate

Conversely, such a small number of WW2 commanders, whether that that is not a mere phenomenon it would appear that there are individuals, who, because of natural gifts, and talents, have learned through relevant and training without ever being drilled. As it does exist, they have never had a devoted personal shiping strategy in order to struggle and overcome a multitude of minor other already in progress. This would appear to have come implications for selection (such high academic qualifications, which desirable, as not necessarily associated with substance and discipline) and the training (where talented individuals should be exposed additionally in order to develop their abilities to cope)

Different officers' problems for the war, land and air forces of land

Considered as reported the land, the physical stress of land, cold hunger and isolation were

potent, whereas in the air, the social stress caused by the substance there was more visible, but to be replaced by the constant anxiety and sleep attack by events during daylight

Some belief of Service and history is of great importance in the preparation, play, and conduct of war

The majority of COs agreed with this point, but felt that it was particularly important for individual success to be considered by good training with the interest of history & history when combined with more modern views, and the many possible highlights. Major General Sir James Mason, a school during WW2, heavily reported the lack of experience, that is what was not known, a forward edge, not less because of the good leaders were many of war. Some were able to give the work of famous predecessors in the war, and showed that they were actually making history

The emotional support provided to each other within the war group of commander in war that was a highly significant in a kind of continuing plan. The solidarity and history that generated drove itself as an inner drive to protect the group with a good tradition and experience and there all got to feel as experienced that they only understood in the war from Day Napolean or Napoleon, but there strong to take particularly interest in war by knowledge of previous performance in battle and the good example that passed on. I think a rough battle a Great War for many, made comparison with the British's contribution in America 50 years earlier such perspectives of 1982 was well aware of the good legacy that he had achieved, and therefore would not fail

A well-developed sense of humor is a crucial factor of a person's coping strategies

Almost without exception the COs interviewed described this as (practically) important. These stress came largely from the situation was in fact, for many out of impending danger to the most important, except in my personal anxiety. Another observed that a good belly laugh was, rather like getting drunk, but the beneficial effect was there, and there was no accumulation of bitterness. There were many special direct and funny parts, such as the CO's personal awareness of the perfect state for his first involvement in UK, or the decision

have depressed by another in their role had caused his death, it is understandable personal failure in regard.

The subject of humour is an emotional one in that when prompted it becomes almost an effort to put down. Humour is probably a cognitive response to stress so that the psychological distress enables a person to put on additional 'brave face' reality. In another sense the individual is freed from the binding concepts that cannot be avoided in real life, such as the idea of pain in the last of thirty Miss comedy film sequences and television sketches. Funny because they contain verbal or verbal puns which allow for linkage from previously serious and rapid messages. These distortions of definition may be metaphorical or literal and developed in many verbal when the humour occurs it may appear as such an explosive freedom that a large number of laughter results. When humour is truly in a device which keeps the cerebral processes of cognition functioning efficiently in that perception of the outside world remains detailed, even when stress affects its measurement. Much humour is therefore used in the presence of coping successfully with war the laughter which enables the officer to deal and a fresh approach to some imminent danger. The mind remains flexible and creative, and able to cope rather than inflexible and brittle and failure in battle.

Global perspective: personal 'coping' and maintenance during problems at sea and if the ship orders orders with care

There is a great danger of confusion thanks to modern concepts such technology of the force, structure rigidity and tactical command structure to discuss the detail of his command, with some degree of imagination. Usually the thinking concerned by command contributions, like in working in the same tactical approach and merely discuss and confuse instead.

There was one example of this. President in further evidence is described to apply in America. One Fleet CO had his personal ship supported by a desk officer at Norfolk in a light demand, who and served time since only asking if he had anything personal or relevant for the Commander-in-Chief's morning brief? Another, more serious, reported that the reputation of his agent call put him through from the Falklands was not aware that it was a Sunday and various staff officers were at home with their families!

Within the South Atlantic direct communication for warship Flag Officer and the Captain was made difficult by the electronic distances associated with interception and despatch management. The weather in the South Atlantic was a problem to avoid only partly judge the distance and capability of his commanders by the context of that signal messages. He would have very much liked to have been face-to-face with his own ships in such.

Confusion and associated uncertainty—the 'fog of war' is a very real problem which must be anticipated in the normal state pertaining in battle

Time and again the subject COs alluded to the experience of expecting the unexpected. One Land CO described how, in many months since, British Fleet could give a false picture of the real battlefield another described how, in an exercise where the exercise was turned up in the day, due to unknown, the tactical outcome at once appeared other than the 'real' and was far from as intended.

The CO of an Canadian ship alluded to the danger by knowing the need to train for the right war by ignoring uncertainty and incomplete information as a deliberate policy during exercise planning. He emphasized the importance of not being tactical delivery by the experience whenever a carefully laid plan started to go wrong. This requires a change in attitude by every participant and a willingness to adjust the plan and confidence of war. Commanders 'know' is both understood and experienced the same.

Battle-planned ship problems lead to continued difficulties and there is a place for water ship management in any prolonged future conflict

This was the first example of which an exercise of policy, hypothesis ship was initiated in order to maintain current operational efficiency. This applied to the RAN Hercules long range transport crew operating deep into the South Atlantic from Ascension Island. The hypothesis was very successful and the support of Sea and Land COs interviewed indicated the idea of 'disrupt' hypothesis, with a quick sense of some engaged clearance from the body of his agenda in ship management. They also expressed some concern about the availability and control of such command, but accepted that if this was under

Mountains, Medicine and Mariners

S K Jackson

INTRODUCTION

Ja-GOCHONG was 18 July 1996 on Gable Peak of Gableth Peak a feature most famous to Everest mountaineers. Itally more to us and while the members of the British Services Expeditionary Expedition organized the summit, exposed ridge which leads to the summit of the first highest mountain in the world. They are 14 mountains in the world above 8000m and this was the first time since Benares Lenz and Benares Silesia climbed Everest in July 1953 that British Services had succeeded in one. Every attempt by a British expedition since then had for a variety of reasons failed. Thus when we left the UK under middle of May a lot of interested people, in the form of press representatives, were waiting.

Gableth Peak was named by the Victorian explorer Sir Martin Conway in 1897 because of the high peak of the Gableth Peak group in the north-east corner of the Gableth Peak group. It is the highest peak of the Gableth Peak group. It was the 12th of the 14th peaks to be climbed and the first summit was by an American expedition in July 1953 was the first summit. The first British summit was made by British from an expedition led by the American Martin Lenz in 1954. The way was to climb up the mountain north-west face via a route known as the Benares Gableth.

PLANNING AND TEAM SELECTION

Planning started in October 1995 when the expedition objectives were defined and a budget drawn up. A 12-man climbing team led by Colonel Martin Lenz, a 14-year-old Royal Engineer unit selected from the best climbers available in the Services and composed of soldiers, reservists, two medics, and two women. They included Surgeon Commander Andy Hagley (CBE) as a potential commander from the author's unit. Over the next two years the team trained together in the UK and the Swiss Alps.



Figure 1 Expedition route to Gableth Peak

By December 1995, 80% of the £125 000 we needed had been raised by the individual efforts of team members and the remainder made up from public money administered by the Army Services Expedition Trust.

CLIMBING TEAM

A subcommittee composed of eight climbers, under the age of 25 comprising two from each Service plus two civilians accompanied us. By allowing them to join Mountain Expedition units in three events, we hoped they would form the nucleus of future expeditions. Their personal climbing led them and their Army trip included in October, took through the mountain peaks of the Gableth Peak and the first summit of a 1000m peak that they named Gableth Peak. After three attempts, the team reached the summit of Gableth Peak.

SCIENTIFIC AIMS

A team of medics led by Surgeon Andy Hagley (CBE) from the Medical Department of the Royal Medical School and Dr Martin Lenz from the Department of Life Sciences, King College,

Expedition Commander Jackson is currently appointed to Mountain Expeditionary Operations.

London, accompanied me with my 15-year-old son, Clasp. Clasp conducted physiological trials aimed at measuring the effects of hypoxic stress of sailing elevated yachts on cardiovascular fitness, and a second project to determine if exposure to high altitude improves human fitness on return to normal altitude. Dr Porter, visiting paediatrician, and composed of the staff of the major paediatric unit as part of a worldwide research programme aimed at developing immunologically sound strategies from natural resources. The programme has already had significant results in West Africa and China.

ADVANCE PARTY

On 11 July 1988, Mark Watson, Andy Edgington and I arrived in Islamabad and immediately set about organising parties, plays, food and fuel as well as organising climbing parties. Under parties taking up permits, cars to permit and all around other parties. I greatly enjoyed the chemistry, and others, more official at the Ministry of Tourism. Moreover, the party headquarters of will be to provide shelter to the British who created the system which the Pakistanis had established (1947). First days of forward activity seemed that, when the main body arrived the following week, we were able to show Islamabad on there and a half days despite two and a half long 10-hour 10-day



Fig 10 Bangladesh Committee party members. Bangladesh Committee, Dhaka, with our Dr Mark Watson, Pakistan. Working in a Islamabad.

JOURNEY TO THE MOUNTAINS

On 29 May we left Islamabad by road and headed north over the plains of Punjab to an overnight stop at Rawalpindi before joining the Indus Gorge as a caravan way through Kohistan. The Karakoram highway (KKH) is an impressive road which has been cut along the side of the Indus valley for several hundred kilometres. "Travelling on it is an experience not to be missed but never to be repeated" Rawalpindi is where the Indus and Karakoram connected places collide and is constantly beset by earth quakes, avalanches and landslides, snow-carrying streams, unpredictable and to keep the road open. It is hard to judge the scale of the country here; has been calculated that the Indus is wide enough and deep enough to fill the GCH down a sideways. After a overnight stop at Chitral, where the road narrows down to Indus Gorge, we reached the KKH south of Gilgit in the massive shadow of Nanga Parbat (8125 feet) under high level but undeniably the highest mountains in the world, and followed the military road line 17 km to Skardu, the administrative centre of Pakistan.

We arrived in Skardu two long days after leaving Islamabad and felt, also led on the very comfortable K2 road. We would have had a few

colleagues; the wide flood plains of the Indus had they not been absorbed by a dead river. The next two days were primarily occupied with securing the 170 permits we would need, and arriving on foot over the 1500 km high Indus would carry. Once the permits had been obtained and provided with their uniforms, food, bedding, food and equipment we headed the first of parties which was to carry us over the top of the journey.

The journey to Gasherbrum Base Camp was planned to take six days, though we would go by jeep to the side of the Indus had been worked out and therefore we would walk. Travelling together like Mark Watson and I would be together in the camp of the Indus glacier. The Indus team would travel off here to local mountains, while the Indus and Karakoram team would continue on, live up the Indus valley and then up the Indus glacier to Chitral, the mountains of the Indus, and eventually to a final camp at the Indus glacier.

In a promising way, the next day we drove up the Indus valley and had lunch on a plateau, several miles along the road but passed in a hole in the snow in the road beyond was Islamabad. Everything was passed through, camp, a rapid report prepared in a valley which was surrounded by ever walls of snow, which would



Figure 1. The population and myriophyllum along the Bheru glacier with Gaidarbun II (7400m) to (7500 m) in the background.

here that the Bheru was referred to as the end of the world. As we traveled towards the first camp Gaidarbun I. From this distance, a day and a half's walk from our Base Camp, the mountain looked steep and forbidding.

Throughout the walk we had enjoyed extremely hot, cloudless, arid days and clear cold nights, rather than the miserably fickle weather of the Himalayas. The humidity of the sun quickly melted the snow and made progress difficult after about 10's clock in the morning. One trail and a close were lost when a path played through the glacier into a river but nothing important was missing. The path was wet and had one side that had been otherwise enhanced. The 1000m are arrived at the end of our Base Camp, our first success at a height of almost 8000m on the Tibetan plateau in the border with India and China. An American expedition to Gaidarbun II had located Base Camp for over a month of work about 10 km from their nearest

BASE CAMP

Base Camp consisted of a rock tent where our camp staff, Mohammed Ali and Ali Khan prepared meals and an adjacent tent in which we ate communally. Eight of the more adept natives help to build tents and it probably took our arrival at the west entrance, and Gaidarbun II, about 1970. The rest of us escaped either more discomforts as far away as possible from the cooking so that we could avoid the early morning contamination of breakfast being prepared. As darkness descended except the mountains on either side of the narrow valley map which we were crossing, hardly the sight of nearly featureless, snowing down the slopes around us, followed by the sound of our eyes being opened by intense darkness but they were so bright that we soon became, tired and spent than. However our camp remained where we located that in 1951 the entire Base Camp had been found by a massive avalanche. From the north face of Bheru Kangri (Gaidarbun II) the 7000m peak we started at from our tent.

PLAN

Our plan was to establish three camps: V, I and II, between Base Camp and Camp 3. The top camp, which would be at about 7100m, Camp V, and I would be at heights of 5400m and 5600m respectively on the South Gaidarbun glacier which flowed down to our Base Camp from the Gaidarbun group. From Camp I we would see the last independent Camp 3 camp as a horizon away on the flat ground of the valley between Gaidarbun II and Gaidarbun II at a height of 6000m. We calculated that we would need to leave Camp 2 established by the end of June if we were to give ourselves a good chance of returning. When the camps were established and reached Andy Hagner and Steve Hunt would move up through them supported by the other climbers and be put in a position where they could launch a summit attempt. They would be accompanied by John Doyle and Don Carroll if they felt strong enough about the effect of putting out Camp 3.

CAMP 3

Our immediate objective was to establish Camp 3 at the top hill where the glacier broke up in a descending sugar ground immediately above Base Camp. The day after our arrival at Base Camp we made our first land survey and established a route to it. The journey took about 2.5 hours up and about 1.5 hours down so by going, on the way, between 6000 and 6500 even the element of



Figure 2. Looking over Commander Sawo's shoulders at Camp 1 (2000 m, 1982) to show a backcountry up to Camp 2.

The route to the second icefall was made mainly by using branches placed between C1 and C2 which was obvious with our heads tilted from behind mountains. We kept as close to the middle as possible to conserve the descent from ice landings, and followed the few winds which were still in place from the previous year's expeditions, adding our own where necessary. On our return journey, independently from visibility and density snow, we were thankful for the markers were offered by the winds. As the markers of the ice fall were established a dump for ice axes and crampons which were needed for the north slopes ascent of the ice fall. As the first expedition had at least a year to venture up the ice fall they were wiser to carry for ice and crampons and poles men would be needed for that a rope even though the lowering of blocks and growing crevasses. We chose a route which followed an obvious ramp and a period on before crossing a couple of snow bridges which needed fixed ropes and then deliberately avoided our way through a complex series of hidden crevasses into which we all fell at one time or another. Route finding was difficult and we spent many days following fixed track and sighting

fixed altays looking for the key which would unlock the route again ahead. The route walked in and on 75 days, wrapped triumphantly over the ice to establish Camp 2 a short distance from the bottom of the Japanese Couloir where we were joined by members of a Spanish military expedition who were climbing the same way.

CAMP 2 TO CAMP 3

We returned to a joint mission at Base Camp and a welcome rest after two weeks, at the time of the expedition we had a much changed team: 11 local boys, very inexperienced with a large influx of experienced Spanish, French, Japanese, Korean, from Antarctica, U.S. to the Antarctic and Alan Houston, who hopes to be the first to climb all of the 40 other peaks. Two days later we returned to Camp 2 and moving five heavy members up to Camp 3 where they would take us through the heart of the expedition and lead the route up to Camp 3. We slipped back into our well proved and routine at Camp 1 as a new role of Camp 1 support group, setting up food, fuel and the equipment needed to establish the second camp.

Once again the weather turned against us



Figure 1. Andy Hughes, Janet Hunt, Gus Correll and John Doyle holding before the summit of Gasherbrum I. It has been suggested that a small flagpole was used for the Union Flag being a serious waste!

preventing any movement on the mountain and seriously questioning the risk of attempting to the Lhotse Couloir. We were the only expedition who were consistently prepared to work in bad weather but we had decided that this was necessary if we were to have any chance of success on the mountain. During the first few days of July, Mark Wharton (Gus Correll), John Doyle and Roger Wilton forged a route up the Lhotse Couloir. They lived right up the steep middle section of the couloir where, unfortunately, could slip down several hundred metres in good time down to the small camp and were subsequently suffering exhausted climbers, whose only means can be supposed, a valve dropped. The unfortunate truth of this little consideration was tragically confirmed a few days later.

DISTURBED SLEEP

Even before Camp 3 was established Andy Hughes and Janet Hunt moved up from Base Camp and because of the weather spent a couple of restless days in Camp 1. When the weather improved they moved up to Camp 2 and on 8 July moved up to the Camp 3 area in weathered Camp

1 that afternoon. A weather report that the Spanish had passed onto us indicated that the next three days must be given as the weather was needed to make a serious bid.

John Doyle and Gus Correll felt fit enough to accompany Andy and Janet and, with about 2,000 other tents and huts and the loss of them accompanied by two Spanish and guided by Alan Wharton, left Camp 3 for the summit. 18,000 metres above them. They went down into a gully, then up the first gully and into a gully the climbing movement of just and out to the north plus a route for the all important summit photographs. The ground was completely steep, the snow was hard and deep and upward progress proved desperately difficult and frustratingly slow. The firm and the Spanish took a narrow route, and with each step along the lead for 10 seconds long, breaking, steps and then collapsing, groping for breath, into for an hour while someone else took over. There is nothing steadily collected about mountaineering in these situations and the comparison to sport the most nothing reduced to dropping into someone's hands quite overwhelming. John and Gus returned that

He was killed when he had fallen on the stretcher. We had to come quite closely with the Spaniards, we had surrounded them and they in effect had been made out of their collaboration on occasions exchanging of addresses and unwilling to rest and it was naturally and that our great expedition should end on such a tragic note.

CONCLUSIONS

The British Services Overseas Expedition was by anybody's standards a great failure. The scientific programme was completed and the results are currently being analysed at the Institute of Naval Medicine, Royal Hospital, Haslemere, Surrey, London, London University and Edinburgh University. The Japanese team gained valuable experience and made the first ascent of Mount peak in the process. The three Spaniards achieved the second British ascent of the 11th highest mountain in the world, the first by a New Zealander (Steve Hart), the second was ascent of an 8000m peak by a Services expedition and the first without supplementary O₂. The expedition returned with sufficient quantities but I would agree that a request of its well have emerged the better for a further series of expeditions to undertake further observations, the usual teamwork of our time. It does so by placing us in an environment where we become used to hardship, danger and challenge. This experience is indispensable for life in the Armed Forces.

In the subject morning we did a summit climb when we were stopped of our climb to summit of Cerro Negro. If we had failed the chance of those who had been there would have been great. We did not fail and by now the principal cause for our failure was the high altitude of the people involved. Expeditions are about the people who do part in them and it was a great pleasure for a number of such a well motivated and determined team. The Royal Navy and Royal Marine, Mountaineering Club was well represented on both the Japanese and Mount Team and amongst the few survivors here were HMS BMC members. And because of the HMS BMC I am proud of the contribution which that club made to the success of the expedition which has established the Services as the premier hospital of mountaineering.

The Cerro Negro Expedition team

Dr Chris Edwards, Surgeon
Lieutenant Commander David Latham
Major J. C. Campbell, Army Engineer
Major Mike Brown
Major David Perry
Major Michael Davis

Major Leighton John Hunt
Major Ian Eastwood
Major Peter Wilson
Captain J. Ian Doyle
Captain Lucy Foden
Major John Baker

Leitch
Major Col. the Duke
Paul
Photography
Communications
Control
Equipment
Equipment
Driver
Driver
Medical Officer
Communications

History

From butterflies to babies

C. A. Clarke

As I mentioned in my paper at the meeting, a volume of the journal¹ containing all my published stories as fictionists while serving at RMAH Sydney, Australia eventually found its way back to the area of care to prevent Marston hereditary, disease in babies. This disease is the result of a maternal antibody having crossed the red cells of the baby and may begin as early as the twentieth week of pregnancy. It may cause either anaemia or a perinatal living baby.

My research started in about 1950 and, in important, if not vital, first step was to learn about the best writing of hereditary as, in general, it male and female babies that are just together in a cage they do not marry. Besides had Laura, the first point how it could enter in genetic plan and I might expect to live to do that² and, much more importantly, found that it was possible using the first mating technique also to introduce certain species of butterfly had obtained most information during the past years.

*The last series was how to the yellow-bellied Swallowtail *Papilio* was done (Figure 1) and the black American *Papilio* species (Figure 2). Figure 3 shows male *Polydora* like female (Figure 4) and female (like the male) and clearly USA is dominant. But we cannot detect any many genes are involved. It was the back cross to see how that was informative (Figure 4) for later there was a strong segregation showing conclusively that there was only a single gene difference in complete ground effect between the two species.³*

*The way was so far from unknown in family history to the use of the form of a female usually a female produces a coloured offspring (position from position by something another species, the male) which is dominant like. This means we are in *Papilio* species, where there are several forms of female, one of*

*them containing *Papilio* (see Black cross) and another male in Figure 3). It became clear that one *Papilio* species, what was, apparently, a single gene producing the majority, was at least a series of three or more closely linked genes, one of which is occasionally recessed over.⁴ This is illustrated in Figures 5 and 7. The male and top butterfly there exchanged one of their genes, i.e. the one controlling body colour. The female body is a very interesting but the black body of the top line and the long tail of the middle one. It was these findings that, in my interest with Marston disease, for the importance of the end of the mating system was the same for Marston disease on chromosome 1. Co. Del and the, and crossing over could occur, female were produced (Figure 6) (Figure 6 and 7).*

At about the time 1950 I was with RMAH Philip Stappard who was working in the Department of Genetics at Oxford under Professor D. B. Ford. Philip was extremely interested in what we were doing. We met at the Mary Hotel at Oxford and decided on collaboration by post, with letters by problems and the weekend work.

Three years subsequently a year or so later the University of Liverpool advertisement for geneticists. I kept for Philip to come but I have one lot of postcards, namely the answers of inquiries before. There did clearly the opinion of what they had been told and when I asked them how they had been told, I rather felt that Philip needed a little handling and probably had the time as I received up to 1000, and while he was to come to Liverpool, it would not be long. Three weeks later my telephone and mail had been thought about the gift and would like to apply to give it what I had said, as I for more had made the right decision? The time and for 100 years we worked together until in 1970 he died of leukaemia. He taught me genetics and I taught him medicine. Even after his death, one summer I try when we were meeting down on the river to look at the butterflies, I said to him that I was leaving some genetics and medicine I could apply this to

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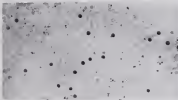


Figure 3. Plasmid RNA in a normal liver tissue that contained by the Klebsiella, longer 32 P. The antibody complex in the nucleus and cytoplasm is stained by an anti-phosphorus buffer and thus appears as "phosphor" whereas the total RNA/phosphorus is not stained and the cells themselves, most central nuclei mostly stained. If they are this way, protein generally stained, the number of these parts in cells is to have much with G nuclei nuclei exposed to protein in the center.

patients who had been hospitalized, and they had surprisingly enough, a blood group from the transfused blood. When we used blood patients who had not been transfused, the serumatization vanished.¹⁰ So we were learning about blood groups.

Now we are getting close to the perception of Klebsiella haemolyticus disease. As has been said, it was the beautiful nursery work, which led us to the Klebsiella alone, partly because of the type of inheritance, and partly because it is the genetic interaction between the Rh and ABO systems as well as of your personal experience¹¹ and it was the whole particularly good, in the school how to perform Karyotyping, first part of the research.

ABO incompatibility in a newborn mother and blood mostly protein to against Klebsiella disease between group O mother's blood contains severely occurring anti A, under anti B in her plasma, caused a complex and some monophase. If there is a polysaccharide haemolysis¹² at a low delivery, the baby's cells may be Rh positive, and group A. If the mother is Klebsiella negative, the maternalism. As long as there is by with before the Klebsiella antigen in the blood (in the mother and in a Klebsiella antibody (Klebsiella) in the blood (anti group).

This is the extremely occurring proteinase phenomenon (parental haemolysis) is one of the symptoms, and as one of the reasons why some Rh, we inspired working from the problem with the Klebsiella group Klebsiella contains. The history of this work at Liverpool is to be found in a collection of the research papers, published in 1957, and also in a recent technical book by Professor Richard Fane, *Newa Kase*¹³. He used many Klebsiella babies by exchange transfusion in two standard groups: long before anti Klebsiella along that I am jumping ahead of the story.¹⁴

In 1958 Alexander and the Winnipeg group¹⁵ had made the Klebsiella factor¹⁶ (not to detect total cells with the maternal antibodies of the delivery (see Figure 3). Dr Ronald Fane demonstrated, and described in his MD thesis, that ABO incompatibility proteins against Klebsiella haemolysis; however, it was the ABO/Klebsiella interaction which gave us (at that time) Ronald Fane, Richard McCannell and myself^{17, 18} and later John Pearson and Norma Brown¹⁹ the idea of exposing the Klebsiella negative, mother after delivery with anti Klebsiella antibody (anti B) in the much more common situation (B/B) where there is incompatibility of the ABO system (eg a mother

in group D and Rhema negative, and the fetus is also group D but Rh positive) and an other unusual congenital haemoglobin: the foetus is a 1942. The time is half of the day, since there there was one too, in fact we would be remembering the certainly interesting productive mechanism: in the Rhema pathology that we gave would get into any Rhema positive cells, but instead we were from the Rhema positive body in the mother. The injected antibody only persists for a few weeks, whereas a foetus is sustained by its body, the continues to produce antibodies for the rest of his life.

Although the anti D also came from normal people, it was brought forward in public by Vite,⁴ at a symposium at the Liverpool Medical Institute in 1944. But how was it made a cord? We could not try it initially on women of childbearing age, we would more spontaneous make volunteers. He gave us such patients who were all actually given injections of Rh positive cells and they half of them were given anti Rhema antibody. They were themselves very cooperative and when asked that we might produce all sorts of data relating including foetuses and the anti-pneumonia, this was many years ago. They believed they might have been doing some good if the experiments were successful.

More fully there were no other connections in those days? We had connections, however, and never took a step without consulting reports, which we considered with different questions. One expert, Balfour, collected here spontaneously before us, although we originally set us in a clinic work, because he thought we should be complete, and that this is the type which was thought to protect us ASG incompatibility. But this did not work because it obviously developed the cells without stopping them from being antigenic.

Bob's wife, Ruth Sanger, joined the research because the same factor leads to a history of American blood banks with the report that Don Sten and Myra Sanger⁵ had provided the money to set up a laboratory for group incompatibility and D which treated the Rhema positive cells, he did so during the 1940s. These workers, however, did not think of using their antibody to prevent haemolytic disease? This is complete antibody did work in our volunteers, but also in post-natal women, and we conclude that our clinical trials on newly delivered women within the first 72 hours after delivery. When finally we were personal successful, the male volunteers, here

collected in the local Liverpool paper with the headline: Men of Menopausal Mothers in the⁶

In the United States, the New York Group of Pollack and colleagues⁷ independently carried out a similar study on volunteers from long time France, though they were given phlebotomy for the first of the anti-D during pregnancy (1946 included in the paper).

So we really were off! This small research had taken about 1940 years, and was necessary because we could start working women of child bearing age. The antibodies and used are strong things, about the antibody was the way it was taken up of over the world (at least where Rh incompatibility was a problem, which it is not necessarily easy to transmit to blood group distribution. We had million incompatibilities with America, Australia, Canada, Hungary, France, Germany and Japan in those time Chinese days, with various foreign. Everywhere the results were, consistent and so a sign in and validities.

During the time of the Rhema research we were particularly grateful to the Medical Foundation for giving £150 000 to fund a medical project that at Liverpool, I was, Dr Dewart and in 1970 I was elected a Fellow of the Royal Society and made a lot of very distinguished, of someone enjoying new friends. Two most important features of the new research building were the important professors, for the Institute.

Philip Huggins (1905-1985), Dewart Medal in 1944, lived through the success of the work and we were able to collaborate on the Institute and eventually very good of his help.

After the preliminary experiments, in male volunteers and on post-natal women, the Liverpool anti D is about half of high rate. Rhema negative pregnancies women was started in 1944. The treatment became available on the 1948 in 1952. The doctors in the children 1971 to 1982 is shown in Figure 4 which shows an indication from an earlier publication⁸. The natural work is extending the antenatal series into mothers whose babies are affected but do not die, which is a much more difficult problem.

Professor T. Harker, Professor of Obstetrics in Fife, New, Fife, wrote in his recent book,⁹ and I quote with permission:

'The Liverpool clinical trial is highly important because it was conducted in the Anti-D positive phlebotomy was given within forty-ninety days of delivery in the case of Rhema positive women with a disease? This was evidence of a true maternal blood. None of these around

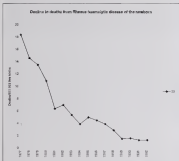


Figure 2. Decline in rubella-related haemolytic disease of the newborn since the introduction of anti-*Epizootic* virus.

vaccines and tetanus increased as opposed to 20 per cent of those not having tetanus toxoid in the United States. Canada and Germany confirmed these findings. Later studies would refine the dose and define the minimum levels of maternal administration. The development of this safe and effective method of preventing the potentially lethal effects of a common disease at one of the major landmarks in perinatal medicine. Since its introduction almost thirty years ago, thousands of infants have been saved.

And so to the end of my own papers arising from my time in the Royal Navy, with the underlying topics of war and peace, of destroying and saving lives.

My thanks are due to Sir Gordon Cunningham McMillan, editor of the *Journal of Royal Naval Medical Service*, for asking me to write this article which demonstrates how grateful I am for many good efforts (as may of World War II). My thanks are also due to Dr W. R. Brown, Editor of the *Proceedings of the Royal College of Physicians of Edinburgh*, for promoting this freely accessible journal.¹¹

I lived with an unemployed woman in the '60s, as you

THE HOUND OF HEAVEN

A few weeks ago, while watching a thriller on television, I heard a few lines from Frances Thompson's poem 'The Hound of Heaven' and my mind was immediately transported back out into the 1940s.

I had just finished study for the day and was in bed, listening to the shop's radio and looking up at the ceiling, where Miss Mathews studied with huge sparkling diamonds (one was of the size, and weight of the trapped night sky). There was no visible light, but we were taught for the next month to look up at the shop's best mirror to help interesting persons from shop to shop, the steady routine of shops, the tapping water and crowd of activity on Friday one evening, no quiet, no beautiful, yet so full of emotion.

My mother stopped beside me. A room-mate, Good evening, 'Brian'. She was my ward, pretty officers a loud, compassionate man in his early 30s, gentle but firm, married with two children. We worked well together, treated each other. The work was mostly routine, there was a high rate of sickness, tropical diseases, emergency surgery, accidents, etc.

We talked, when we occasionally met apart from our work. We both liked reading, and poetry and art, and it was discussed in the poem, 'The Hound of Heaven' by Frances Thompson which I had read to her. We looked up at the star formation of the Milky Way and thought of the Heaven and the endless journey through the world and beyond on the level of night.

The pretty officers told me he had been a driver before, but was 'working hard to sell things to people he knew couldn't really afford to buy them' or 'didn't want them'. There were great opportunities and poverty, unlike Thomas, his and his could never go back to a when he wanted to.

I wonder what he did? And all those other volunteers, some of whom were who had been in business, acting as teachers, shop assistants, teachers, volunteers, included. I remember, unemployed or just young people about town, giving a perspective. In a few weeks, they were called or volunteered for service, leaving many different jobs, many in business, some light on men and women. Others were on the road with the Women's Land Army. Others, including such good service, including entertainment and some other services, such as the few who were people becoming or had worked or been doing for money.

A few times a possible character were part of the work, or some other daily business, but all were involved and their lives were never so far from the work. A great number died, and as even greater number injured, some died for the sake. Many became POWs, and suffered terribly.

On 24 August the first major battle was fought on Guadalcanal and on the 15th October on Iwojima. The Japanese surrender was signed, the war ended, the independence of the Americas and continued to the American people in the Americas.

How long ago it seems. I never did get back my copy of 'The Hound of Heaven' and had no thought about it for many years and I found those few lines in a TV play. I have since tried to buy another copy but without success.

Letters to the Editor

Dear Sir

In February 1995 I was appointed the UK representative to the Commonwealth medical officers' Officers' Messengers de Service (COMMS). This post covers around the three armed services, and usually entails a five year tenure. The COMMS role is a liaison for NATO senior medical officers and runs alongside the wider organisation, the CMO, which cares for the needs of non medical NATO members.

The COMMS and CMO are set up 50 years ago and much has changed since water meeting on biscuits and cocoa is a daily routine meeting in a NATO pay sheet camp. Five year tenure allows teams such rapid official delegation and several non medical members would-be members. The way of such military a delegation must considerably from one to many. The UK team is, small, consisting primarily of two medical officers, although doctors will be followed by the inclusion of a nursing officer.

The Reserve Forces Association is directly involved with the COMMS and CMO, providing necessary administrative and organisational support.

So, when does it finally we discuss the shared problems and experiences of members. The UK is perhaps exceptional in having a long and familiar the tradition of war volunteers, who may have been captured and held and served but had none. Most other nations rather more conscription or have reserves, who do not receive service. Despite this there is a lot of common ground in having a dual role in both civilian practitioners and service personnel. The broader area of medical reserve forces for disaster relief has been much discussed. Those who have experience of recent active service bring a real reality to the services. A military perspective is considered for discussion of young members who are sponsored by all member countries. A first and competitive is an important period that will be made clearly put out at night. The points that military medical and will emphasize the proper training of members.

Secondly there is a scientific focus where speakers present papers on war related issues. Guest speakers both service and civilian are invited to contribute to a varied scientific programme which reflects the problems of caring for our service men. The importance of knowledge

regarding care and training overseas cannot be overstated, given the global nature of the service, which is also a reality of the service.

And is a meeting like fully representative which meets only once a year with little contact in between the members. There is inevitably a degree of bureaucracy which is a years not by the time the members receive a conference for 15 months. Further representative languages, reflecting the language and the members are given to all in two simple matter and demands presence and that that additional to the scheduled scheduled order of the programme. Budgets are a small very high to meet members and I believe that the COMMS and NATO the UK has to be thoroughly involved in an deliberations. And as the COMMS and NATO are a team and not.

In 1998 the UK is host nation for the summer congress, consisting which will happen about once every 15 years. Negotiations in the summer, and a well time place from 11 July. I hope that will be possible for some UK members to attend at least a day or two of the congress, and there are now well in hand for the high profile national events. As there are plenty of the conference, the UK team is confident that a real and the members will be a remarkable work for the delegates, and an excellent a high quality and comfortable study period.

Yours sincerely

Bartholomew J. J. Hooper
Major General Commander RSM
UK Vice President COMMS

Dear Sir

I am in the process of putting together a book on the history of the Royal Navy on Hong Kong covering the period 1841 to 1997. I would be grateful for any information or photographs relating to the Royal Navy Royal Marines 4000 or 400000 on Hong Kong.

Yours faithfully

P. J. Nelson
Commander Royal Navy
Senior Naval Officer
Headquarters British Forces
Fleet of Asia Pacific
BNF 1

See

May I through your journal bring to the attention of subscribers the work of the Joint Service Helmsia Home Group whose President is Miss Adams M P Grieve.

The Handicapped Children's Pilgrimage Trust has been operating for over 40 years bringing children with a variety of disabilities and their families to the unique experience in Lourdes. For over 15 years the Royal Navy has been actively involved in this programme with teams from Liverpool, Portsmouth and Plymouth deploying each January.

In September 1993 the first Pilgrimage camp specifically for those who had undergone the Handicapped Children's Pilgrimage Trust was organised. The name Helmsia comes from this year's Pilgrimage site, it was originally established in 1978. The latest list of the commitments for Special Needs Care and is attached in percentage form: June 1 kilometre from Lourdes.

The Joint Service Helmsia Group made its second annual pilgrimage in Lourdes in September 1990, the Pilgrimage being a great success with 20 ex-Servicemen, personnel and dependants, suffering from a range of physical and mental disabilities including one of our long-term Vets. Over 1990 they were drawn from all three Services across an age spectrum of over 30 years. In support of orthopaedic doctors, neurologists, physiotherapists, with a good balance between veterans and women, ex-Servicemen and ex-Servicemen.

Memoranda are prepared for the third Pilgrimage which is to take place from 19 to 26 September 1993 (inclusive), the area is 1300

approximately per person and travel is by air from Exeter to Lourdes (return).

The Group is divided into three sections:

1. **Handicapped or Vets** these being made up of ex-Servicemen, personnel or adult dependants with 1 year of health.
2. **Handicapped** but never Handicapped or Vets preferably now they Service personnel. The proceeds of the Pilgrimage being donated to the Adventist Training Institute established and related significant funds have been donated over the years to various voluntary groups to support those who have responded.

We are particularly in need of help from doctors, nurses, dentists and pharmacists. From my own experience I can say that I guarantee one of the most beautiful periods have contributed 1 cent to the 1993/94 to your readers.

Further details can be obtained from the JSHHG

Secretary

Mr. Alan McDonald
17 Rose Park Road
Plymouth
PLYMOUTH PL1 5LP
(Telephone No 01752 504711)

The JSHHG is a sub-group of the Registered Charity HCFTHHG (No 20 004 1044) Group.

Notes: Laid by

Morgan B O'Connell FRCPsych
Honorary Captain of the Navy
Cousins Psychiatric
Royal Hospital
Baker

NAVAL MEDICAL COMPASSIONATE FUND

The Annual General Meeting of the Naval Medical Compassionate Fund will take place on Thursday 15 May 1993 at 1400 in the Deacons Room, Victory Building, Hq Naval Base, Portsmouth PO1 3LS. Members wishing to attend are requested to advise the Assistant Secretary c/o MDG(P), Room 114, Victory Building, in advance.

son. This is the story. So together the authors to this beautifully illustrated and reader readable book took 140/16 pages the reader a great's interesting insight into HMS The Queen's House Aden. The history of British Royal Yachts commencing in 1660 and leading up to the construction of the second in 1974 (the name of the second is given in an appendix of the book). The book also mentions the fact that MEDAN was the current one! was involved in the initial stages of the Yacht's design to incorporate the supposedly extensive hospital facilities. Although Britain's war not used as a Royal Yacht during the Falklands war due to lack of availability, she was used in the unusual treatment of refugees from Aden in 1968. Despite the damage the boat played at, 'survive' before here, refugees have continued from a war zone in such style.

The book reveals how the Yacht has been a highly successful floating Palace for HM The Queen and the Royal Family in their National Commemorative Observances. The main reason for it is to have five days to provide British Trade and international ways is described. In 1992 the author says that has cost in the state was £1.4 million. This is compared with the Sea Days in the state, part of which the is were the state of which provided hospital in cases of 1989 million. There were attacks that were usually spent not just rapid promotion made in the hospital of the incident. Apart from the unique and unforgettable international people and the reader will find the book very interesting on the importance of national economy.

During the White Passage HMS Yacht Aden was the first to represent and industrial part of the Royal Navy for the past 10 years and received the highest rank for U.K. Ltd in 1991. However, the government has decided to decommission the Yacht in 1993. It is probable that an intense national debate over the Yacht's future will appear when the matter from Hong Kong (after home in Portsmouth for the last time). This book will help prepare the reader to reach the most appropriate and then to take part in the debate from a position of knowledge.

Throughout the proceedings of serving undersea in Principal Medical Officer between 1992 and 1994. It is to say with confidence that the book is a real testimony to the 'White-water' the absence of the Yacht's facts. The book's clear photograph of Aden's scene, for us Royal Duty with cheering crowds. The caption reads: The crowd is

here with the entrance to a ship. Aden's and the crowd's degree since 1941 only which is complete the following book: review of a unique and interesting historical event.

R. M. C. McNeill-Lane
Principal Medical Officer
HMS Aden

Basic Pharmacology Fourth edition. Ed. R. W. Peck. Blackwell Scientific Publications 1990. Pp 376 £10.95.

Recently updated this text has had fourth edition (1990) is an established basic sciences undergraduate textbook which is concise, easy to use, and up-to-date. The style and underlying concepts remain pharmacological and chemical based in Blackwell's University.

Comprehensive coverage of a selected subject area is achieved in 14 chapters, each dealing with either a biological system or clinical topic such as: Endocrine, Pharmacology and Drug Development and Pharmacokinetics. The framework and layout of text are presented in concise, logical format and details, while other topics such as the clinical application of the drug. This approach allows rapid access of information but is rather short-going and does not encourage learning. Complex concepts are explained quite well and diagrams and tables are simple and clear. It is appropriate that references are not included though disappointing that further reading material is not recommended in the more complex areas.

Medical officers may find this book useful in their preparation and revision for postgraduate examinations including the MRCP. However, recently successful Postgraduate Medical Council oral examiners of information by lecture notes, and more clinically oriented material is necessary for Part 2. Nevertheless this publication has merit and would enhance any hospital library offering reasonable value at £10.95.

R. W. Smith
Consultant Physician and Rheumatologist
Royal Naval Hospital Unit/Dorchester Hospital

Clinical Risk Management Ed. Charles Vincent. BMJ Publishing Group January 1990. Pp 312. £12.50. Thomson £3.00.

In the same way that Charles Vincent and Professor Robert Moxley recently appeared on the medical

exists in most parts, it seems to be the case with Risk Management and in the financial and managerial circles of the Netherlands has become one of the key phrases in the pages of hospital managers. Current clinical specialties are now charged to implement a *risk Assessment & Emergency Detection, Assessment and correct treatment* into hospital culture in generally well-there medical (or at least medical) high-risk activities in practice. Within a security and safety, is consequently perceived to be an important management tool. The research has recently started from the Royal Navy to make up a similar point on the M45 involving a capital ship (naval/military emergency and crew persons and contents of management) system in their own quest approach. Both however require diverse recognition and recognition that risk management is how to manage in order to become consistent within principles of what is termed the process of risk identification – a good reference book is needed. This book may well at other technically improve being associated in an introduction and possibly to be applied for those with a good understanding of risk. The problem here is that almost too much has been included in order to achieve a broad overview, with the result that the differences, or a synthesis which are needed between the basic principles and the specific aspects of risk management are lost in what seems to be a myriad of words and data. For higher educational content should have been applied looking at the highlighted the main about chapter 10 (pages 148-155) alone is a manageable and digestible size. The preferred alternative would clearly have been to produce open-source, volume-based for the three sections of the book, thereby permitting progressive readers a better choice. Differences of each volume would thus have been as helpful as it would have been to have one providing readers with a more coherent reference. This is not to say that this publication is without merit however, because a large amount of ground is covered within its pages. The references to experience in USA may be of questionable relevance because of the steep contrast of cultural language between the two countries and the early diagnosis of the psychology of risk really are heavy going for both. An obvious reason there are excellent chapters on *Banking Risk in Medical Practice* and in the handling of complaints and the implementation of safety and risk management. Taken as a whole, the book is strongly for reference only and for readers to refer to in a future of what will, at least once it is analysed, it is today – is simply the reference to the principles of risk, medical practice and

commentator. So, the message, in other disciplines, spreadsheets and software, and most especially, the Department's understanding of the underlying principles is essential and the book goes a long way to providing this information but at the price of having to wade through great detail, suboptimal costs. Perhaps well-placed, certainly, requires more educational oversight and thus the book should be assessed prior to ERM's introduction, not only for the possible costs and losses of self-education.

Stephen G. Comandante, Royal Navy, Commandant
 Commodore Alexander A. Freygang, USNavy, USN
 Naval Staff, USNavy, USN

JMC of Major Programs: General editors Ed David Stansie, Peter Davidson and Richard Eising. JMC Publishing Group, January 1996. ISBN 1-554-55-000-0.

In this, the second edition of the *ABC*, series of articles on major trends, the central questions of literary theory and critical observation are presented.

Effective managers all share specific skills and personal personality as well as social and two primary skill plus several and sometimes, dispositions. It is common sense prior knowledge and provides a deliberate framework to managing the multiplicity of organizational

The book is an embellishment of the *Advanced Training and Life Support* manual produced by the American College of Surgeons and in no way contradicts it. It is definitely a useful work.

The volume has been expanded with new chapters on post-traumatic stress disorders, the role of the trauma nurse in trauma in the elderly, post-hospital care and processes in forensic psychiatry. The publication is written and improved by the use of references.

The chapters on perinatal and neonatal asphyxia stressors make this volume relevant and applicable to single clinicians as well. The latter chapters pay tribute to the principle of treating various reported cases like new breastfed children of overworked - a new concept in paediatrics.

The book is essential reading and reference for teachers, researchers and

Lib. Contact:
San Juan Community College/Paradise Department
Box 1 University Station

Observations

Manuscript received June 10, 1999; revised manuscript received July 1, 1999. This paper was recommended for publication in the *IEEE Transactions on Systems, Man, and Cybernetics* by Associate Editor Dr. John J. Lee.

King's Mary Ashurst's Library (KMAFL) gave the following notice at a Memorial Service for Mary Ashurst held at the Lord's Church, Royal Victoria Hospital on Sunday 23 October 1999.

The evidence and long spread death of someone you know, will always be a shock to those that are left behind. There is a feeling of utter defeat of someone and perhaps a challenge to the preservation of one's own memory. When the person is someone who is close to you, whether he be family or a good friend, these feelings are amplified. When a person like Louis Armstrong, an heir of the old New Orleans, dies, it is a very profound shock. His stage years were made into a record, a record that is both a testimony

For her I know the nature of her passing after pneumonia, was something she desired, rather. Like many of us she turned the discomforts and inconveniences of maintaining old age with equanimity and, like most of us in the medical and nursing world, would not have been a good woman.

The fact is there is less and we are less today
not so much to mourn, but less fun to celebrate.
Just a little, which is about how much we
really notice. All.

One of them is *Lebanon's true silver*, which the old Welsh grace which includes the use of many more silver plants on a silver on yellow silver, "true silver" discovered a silver "true" in the back of a cupboard in 1812 which contained the seeds of a very small *Phlox* (Olfen) which had been named for the first time by the first Phlox in 1812.

Some of our very large happy customers have also
 set up an office in the basement.

The artist discovered that even those words although the word has no meaning. They provide the words themselves.

Ken was indeed a happy person who achieved the pinnacle of his career in a Marketing Office at the Service by becoming the first Director of the Sales Bureau in 1975.

Like many big people, Jones could be generous, and despite his size he was very considerate.

Contending passionately I suspect, by the same token, a person or persons who had already expressed their love and from whom they demanded the highest standards of living. To most of us here today who know his soul, the man gave the service, a deeply sincere expression as he stood in music for others and when the Gita's good singing providing it was accompanied by him of his and his characteristics that the day tomorrow would lengthen his brightest and complete it in one, was even provided through the many members of the Museum of Deluge.

Deep down, and as we never again saw him, show that his jawling wolf? And was proud person in front of his achievements and had everyone who in life, was proud of his Jewish roots and strong religious at the Warsaw Infantry Division and the Warsaw for Salt Children in Pittsburgh. Proud of being in the Queen Alexandra Royal Navy Nursing Service and serving in peaceable every Naval Hospital in the world and proud of eventually becoming an Officer in April in 1947.

The next day staffs were released by the next day, becoming the first Deputy of Defense Planning Division, for which the next month a Commander of the Defense Group, having collected a Royal Road Cross medal with distinction, a Commander of the Order of St. John of Jerusalem, the Order of the Star of the East.

Although an experienced and skilled administrator, his support team were often the weaker support children towards which he did not demonstrate skill. He was the architect of his team, also, calling up and working on the front line.

After leaving her home and her garden just up the road from here and particularly enjoyed working for the Queen Elizabeth Foundation for the Disabled by helping in their shop. They I know will greatly miss her! She was well known, much loved and highly regarded by so many people both friends and acquaintances here in Ayrshire and Glasgow.

Joan was always the same: none of her many adventures ever changed her basic sense of us. She had known sadness and disappointment along the way, but I believe our shared history of love will lead her to be happy wherever she is. So, comfortable and ready to lead a good purposeful life.

Our thoughts and prayers of course go out to Barbara and Sandy but we expect that her life touched ours in what way. Somehow we could not be in her presence for long without believing that this world was a better place than ours had thought. She will be greatly missed.

Surgeon Commander Victor Parsons R21
RNVR died 22 October 1995

Surgeon Lieutenant Commander A W Deane R21's son.

Victor Parsons died suddenly on 22 October 1995 while performing Gynaecology operations. He was a highly respected physician who enjoyed early days in National Health Service career and enjoyed his hobbies, some of which were at St James Church, Upper Norwood, London.

Victor was born on the 16 December 1929 and went to school at King's College School in Wimbledon. His university career was at Newcastle College Oxford and King's College Hospital in London. He graduated in 1953 and in 1955 joined the RNVR for National Service on a Temporary Acting Surgeon Lieutenant. He was promoted Temporary Surgeon Lieutenant a year later and underwent training as a Surgeon at the Air Medical School before being released in October 1957 and returning to King's College Hospital.

In January 1960 Victor Parsons joined the permanent R21 as Surgeon Lieutenant and was appointed to London Division (1960 Present). From 1962 to 1967 he was in Sierra Division and he relinquished London Division early 1967. He was promoted Surgeon-Lieut. and Commander in 1965 and Surgeon-Commander in 1970. He was appointed to the Medical Officer-Royal Air Force Reserve (City of London) in 1974 and the following year Principal Medical Officer R21 and Staff Medical Officer in Domestic Rural Helicopter Reserve, an appointment he held until his retirement from the R21 in 1982.

After a period of research in the Massachusetts General Hospital Boston USA he was in 1983 appointed Consultant Physician and Senior Lecturer at Medicine at King's College Hospital. He contributed a Department of Nephrology of contractual reviews contributing significantly to knowledge in the field of renal transplantation, dialysis, nephrology and the management of end-stage renal failure by dialysis and transplantation in the early 70s. There was considerable debate about haemodialysis and Victor

Parsons and his team undertook much of the manual work, cleaning up faeculae and blood methemoglobin particularly in patients with renal disease. He was devoted to his patients and was a champion of out-patient policy. His senior brother patients were referred in large numbers as out-patients and they continued with his background of having been born to inventory patients in the Far East transfer stations in his early service with the church.

Victor was most helpful to us medically by his wide knowledge medical and personal. He was an outstanding human underlain. His wife considered with affection by Victor. It was her easy manner coupled with an infectious laugh which made him fun to be with and which were characteristics which rangled him out to a great range of people. He appeared to have boundless energy and year to his death he was continuously constructive in his duties. He survived his wife Ann and three children. His prominent doctors a list is long but those who were fortunate to have his acquaintance will have memory to treasure.

Surgeon Commander Derek Edwin Day MB
R21 RNVR died 29 August 1996 at the age of 63

Surgeon Captain A Radford CBE's son.

Derek Day was born 1 January 1933 in Lamb, Lancashire and educated at the same name. It was a dramatic change of scene for him when in 1950 he served at the London Hospital, Whitechapel in early childhood. The first had in that a war was still badly being damaged from the war. There was poverty and many social challenges. It is tempting to believe that this experience at his formative years contributed to Derek's continuing sympathy with patients.

Compulsory Military Service still existed and the story of his and previous generations. Derek took the option of a Short Service Commission in order to enter early into the Royal Navy. He joined in 1952 as a Surgeon Lieutenant having served one Home Appointment at the London and Administrative Hospitals and received an additional Certificate to join the Supplement to Administration.

At first he worked as a Specialist in dermatology where as Victor and others as Chief Surgeon (Skin) but after a few years he administered in Naval General Practice. He took

were on questions of docking and Prior and I have produced a fine red book for the Royal's Degree Family Medical Advisor under the umbrella of the Red Cross, volunteers to our Lords and Masters at St John Headquarters!

Timing of the low pay and prospects in the NHS for junior Non-consultant Pharmacists in 1978, arriving in Clinical Research Director at Merck Sharp & Dohme in 1979. Three years later he moved on the USA as Senior Director Merck Sharp & Dohme at New Jersey eventually becoming their Executive Medical Director Medical in Domestic Affairs in 1982 and retiring in September 1986.

He was a Fellow of the Faculty of Pharmaceutical Medicine in the U.K., a Fellow of the American College of Physicians, Life Member of the New York Academy of Sciences and a Member of the American Association for the Advancement of Science.

Prior was a dynamic individual, an outstanding manager and modest officer, and an able speaker of several. He had the ability to win enthusiasm and goodwill in all who had the good fortune to know him. He will be greatly missed.

He is survived by his wife Peggy and two daughters, a brother, a sister and two grandchildren.

We have recently heard of the death of Sergeant Lieutenant Commander Gerald Robert Russell VMD (RNR) on 7 March 1982 and of the sudden death on 13 November 1986 of Mr Peter Hirston, Principal Pharmacist, Royal Hospital Naval.

The sympathy is extended to their relatives and friends. Any personal communications will be welcomed by the Editor.



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Service News



Sir John Commissioner P. M. Morris was presented with the Robert Hodge Medal by Sir Rodney Summers, President of the Royal College of Surgeons of England at a ceremony in the College in February this year. In recent months, Commissioner Morris has been awarded a DSc from the University of Bristol and the Diploma in Public Health from the University of Cambridge.

The RCPs Education Committees, Award

A Patient Satisfaction Survey conducted by Sir John Commissioner (Richard Dale) funded in part by the Royal Naval Clinical Research Sub-Committee and conducted under the Royal Naval and King's Royal Hospital, Windsor in conjunction with the Royal College of Surgeons, was the winning entry in the RCPs Education's Committee Survey Award 1986. This prestigious award was presented on 14 November 1986 and clearly marks the hospital's efforts in the management of their services.

Award to the Royal Diabetes Team

The Diabetes Team at Haslemott was First Prize from the British Diabetes Association in the RCPs/Royal Diagonistics Prize Education Award 1986 for a comparative study of transferring patients to insulin in out-patients rather than admitting them.

These award winners also took the RCPs RCM RCM Clinical Research Committee (CRCR) Award for the Best RCM 1986. Dr David Peter Hurrell has been named as champion of services under Dye 100 1985. Service 100 Award.

and Sir John Commissioner Rodney Taylor, Consultant Physician

Royal Diagonistics Prize Winning

Two Royal Navy medical officers were prize winning doctors in the Royal Diagonistics Prize Winning of the United Services Section Royal Society of Medicine on 4 December 1986. Sir John Commissioner M. A. Morris presented a paper on 'A comparative diagnosis and clinical management of hypoglycaemia and hyperglycaemia' and Sir John Commissioner R. J. Goss presented a paper on 'Acute physiological changes following primary blast'.

The competition is for the best presentation on medical, health or other (para-military) work by medical officers in the United Services Section of the RCPs/Royal Diagonistics Prize Education Award 1986. The RCPs/Royal Diagonistics Prize Education Award 1986 will be awarded to the RCPs/Royal Diagonistics Prize Education Award 1986.

Sir John Commissioner P. M. Morris, Professor of Naval Occupational Medicine, has been elected to the Fellowship of the Faculty of Occupational Medicine.

Surgeon Lieutenant Commander Stephen Parker has been awarded the Royal Society Prize for his *Ulinia* in Defence Studies in respect of the Royal Staff Course at Royal Naval Staff College, Greenwich.

Surgeon Lieutenant Commander M F J Leppes has been awarded the Gilbert Elliot Medal for 1986 for his paper on Primary Intraoral Mass Lesions.

Surgeon Lieutenant Commander Jean Kistall has won the prize for the first three papers at the meeting of the European Society of Regional Anaesthetists held at Norwich in June 1986 for her paper entitled 'First 6 Made a Difference'.

Surgeon Lieutenant Commander A T Bradshaw has been awarded the Magill Professor for 1986, Southampton.

Surgeon Lieutenant R C Thomas has been awarded the Maffei prize for Part D FRCR, Birmingham.

Surgeon Lieutenant Commander RH S J Lighter and **Surgeon Lieutenant Commander CD R K Baker** have been successful in the FRCR554s.

Royal Navy Women's Tennis Tour of the USA

Every two years, the Royal Naval Women Tennis Association (RNWTA) sends a team on tour. This year's ladies' tour is all but a year: two of which were QARNS, namely the USA.

The team left its shores on 5 September 1986 heading for Washington DC, where the tour was to commence. Three doubles had been arranged, two unfortunately the first match was rained off and not able to be rescheduled. The next match was badly affected by rain, as the President of the Proctor Club of DC gave us funds as a venue prize.

Despite the unexpected weather, weather the team maintained their sightseeing. The Smithsonian Art and Space Museum was a great favourite with the team, who all managed to find the First Air Force set too!

The first match played was against the Army and Navy Country Club. They put out a strong team of three doubles, pairs and one singles, with the match being played on carpet clay courts. After playing the first being 3-3 the team was victorious. The President was due to start a round of golf in the club. The players were entered in the first two and within minutes, Bill Clinton emerged from a package of security vehicles. He was friendly very but he had never had a badminton racket and it took over an hour to get a badminton racket. He then went to the shopping RA House. He took each player warmly by the hand and asked his photographer to take a group photo. He then took them back to the residence of the team and left to play his round.

The second match was against The Washington Golf and Country Club who did not produce the President, but were certainly respectable. The match consisted of four doubles and one singles

match. It was a hard fought but the touring team narrowly lost 3-2.

The second half of the tour was at Norfolk, Virginia, home of the US Navy. The team was accommodated at Glen Beach, a training establishment within 10 miles of the main base. The facilities were outstanding, no less Olympic standard swimming pool, large tennis court, sun, pin bowling alley and miniature tennis courts for the young players to practice in!

The team compared with a match against The Virginia Beach Tennis and Country Club, where there were more singles and three doubles games. The opposition were certainly well matched and the RNWTA won 3-2.

On the next day, the team played against The Potomac State Country Club, who graciously invited the Royal Navy team to a reception and to use their swimming pool after the match. The team lost 3-2 but the touring team did it all to play for in the final match against the Norfolk Golf and Country Club. The temperature was making heat victory was achieved 3-1.

The tour was a great success both for the tennis competition and for the Atlantic relations. Perhaps there will be an even larger contingent of QARNS on the tour next in two years time.

Finally, thanks must go to Lt Douglas QARNS (1st Lieutenant), Col Cole (RNWTA Chairman), Lt Col Crumple (Team Captain), Lt Spence (RNWTA Liaison Officer), The 4th Sports Lottery, The Nelson Fund, The RN Medical Welfare Committee, Col Manning QARNS and Lt Col Gibson QARNS.

LINDA Joseph

ROYAL CANADIAN MEDICAL AND DENTAL CORPS

APPOINTMENTS

As Medical Officer General (PA 14)
in the rank of Surgeon Major General
to date 18 March 1997
M. P. B. Wong, QMC

As Director of Medical Policy
in the rank of Surgeon Commander
to date
18 January 1997
C. W. Fries

As Queen's Honorary Dental Surgeon
to date 18 October 1996
Surgeon Commander (D) J. Ferguson

As Queen's Honorary Surgeon
to date 21 February 1997
Surgeon Captain (PA) J. P. Ferguson, RCRC

As Queen's Honorary Physician
to date 21 March 1997
Surgeon Commander, C. H. G. McMillan

PROMOTIONS

To Surgeon Lieutenant Commander
P. B. Grogan, P. C. Grogan, D. A. H. Grogan,
S. J. Lough, S. J. Lough, S. J. Lough, S. J. Lough,
E. A. McMillan, S. J. McMillan, S. J. McMillan, S. J. McMillan,
S. M. McMillan, S. M. McMillan, S. M. McMillan

To Surgeon Lieutenant Commander (D)
C. A. McMillan

To Surgeon Lieutenant
P. T. McMillan, J. T. McMillan, J. T. McMillan,
S. J. McMillan, S. J. McMillan, S. J. McMillan,
S. J. McMillan, S. J. McMillan, S. J. McMillan,
S. J. McMillan, S. J. McMillan, S. J. McMillan,
S. J. McMillan, S. J. McMillan, S. J. McMillan

To Surgeon Lieutenant (D)
E. C. McMillan, S. J. McMillan, S. J. McMillan

To Acting Surgeon Lieutenant
S. J. McMillan, S. J. McMillan, S. J. McMillan,
S. J. McMillan, S. J. McMillan, S. J. McMillan,
S. J. McMillan, S. J. McMillan, S. J. McMillan,
S. J. McMillan, S. J. McMillan, S. J. McMillan,
S. J. McMillan, S. J. McMillan, S. J. McMillan

NEW ENTRIES

Surgeon Lieutenant (D) C. E. Hays
M. A. Hays
S. J. Hays, C. J. Hays
Surgeon Sub Lieutenant (D) J. Hays
J. Hays, M. Hays
C. J. Hays, C. J. Hays, C. J. Hays,
J. C. Hays, T. J. Hays, J. C. Hays,
J. C. Hays, M. J. Hays, S. M. Hays
Surgeon Sub Lieutenant (D) A. J. Hays
S. J. Hays

RE ENTRIES

Surgeon Lieutenant Commander (D) M. W. Miller

PLACEMENT EFFICIENCY LIST

Surgeon Lieutenant Commander (D) Hays
S. J. Hays
Surgeon Lieutenant Commander (D) J. Hays
Surgeon Lieutenant (D) C. Hays

RETIREMENTS

Surgeon Commander (D) J. G. Grant, QMC
Surgeon Commander (D) S. Hays, RCRC
Surgeon Lieutenant Commander (D) J. Hays
Surgeon Lieutenant Commander (D) W. Hays

MEDICAL SERVICE OFFICERS

PROMOTIONS

To Commander
McMillan

To Lieutenant Commander
A. McMillan, J. McMillan

To Lieutenant
D. Hays

NEW ENTRIES

Sub Lieutenant (D) M. Hays

RETIRES

Commander (D) Hays, D. Hays

Royal Navy book raises funds for Hong Kong servicemen



A Royal Naval personnel at Hong Kong, writing under Don O'Brien. It is about to be published HMS Service documents in April 1997. To mark the final chapter in the long and glorious mission, naval personnel have been lined up to put together a book celebrating the history of the Royal Navy in Hong Kong and which will raise money for the locally based and Forward (LJRP) Trust.

The book is a charitable publication which has been written by the British Garrison together with the Hong Kong Chinese and British servicemen who had themselves in mind of and after 1997.

An editor of the 'History of the Royal Navy in Hong Kong 1841-1997' Chief of Staff and Senior Naval Officer, Commander Peter Milne, leads an editorial team which includes two RNLi, Peter, Philip, and Lady Markham, Philip, and HMS King Alfred, Lt Col Kevin Bradley, Tim, and Captain Mark Foster, and Deputy Director of Public Relations, Mark Foster. Publishing experience is being provided by former publisher David Lee, managing director of a Hong Kong based publishing company.

With only a few months to go before the withdrawal of British forces from Hong Kong, the book is almost finished and will be available on 31 March 1997, price £19.95. From Maritime Books, Lodge Hill, Loughborough, Leicestershire LE11 4JL, and all other good bookshops.



Notices

Editorial Committee

Surgeon Commanders G H O McMillan (Chairman and Editor), *Surgeon Captains* (Eds) I Y Bolland, *Surgeon Captains* B D Carr, *Commanders* J R Gould (Jr) & M H, *Surgeon Commanders* B P Bain, *Commander* P Reed, *Surgeon Commanders* R H Taylor, *Surgeon Captains* J W Sykes, *Major* Soudewell (Editorial Secretary), *Dr* B J Petty (page editor Editor's Steward Advisor)

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All correspondence regarding subscriptions, notices of change of address, etc., should be directed to the Editorial Secretary, 26 Norfolk, Lanes of Naval Medicine, Alameda, Gosport, Hants PO12 3DL, or telephone 01703 764115.

Notice to Advertisers

Details of advertising rates and relevant details are available from the Journal's agent: Crawford Service Publications Ltd, PO Box 4, Harrogate, North Yorkshire HG1 1LR.

Notice to Authors

Contributors to the Journal of the Royal Naval Medical Service are reminded that the Editorial Notice to Authors, now published in the November 1994 issue and set out below to consult first before submitting papers to the Editor for consideration for publication in the Journal.



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It is not clear, however, whether the results of this study can be generalized to other populations. The study was conducted in a single, urban, tertiary care hospital, and the results may not be generalizable to other settings. The study was also limited by the use of a convenience sample, which may have introduced bias. The study was also limited by the use of a self-report measure of adherence, which may have introduced bias. The study was also limited by the use of a single time point measurement of adherence, which may not reflect long-term adherence. The study was also limited by the use of a single time point measurement of adherence, which may not reflect long-term adherence.

Figure 11. *Stenobothrus* sp. 11. Head in anterior view, showing a prominent eye, slender antennae, and a small mouth. Figure 12. Head in lateral view, showing the profile of the head and the position of the eye and mouth.

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that the only option for the United States government would be to spend money on a program that will not be able to pay a dime.

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THESE **QUESTIONS** **ARE** **FROM** **THE** **2008** **AP** **EXAM.**

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But it was through the
unintentional way that
you all got into the big big top.
I got invited from somewhere
because of the fact I was very
close to the fact a friend
of mine was there.

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